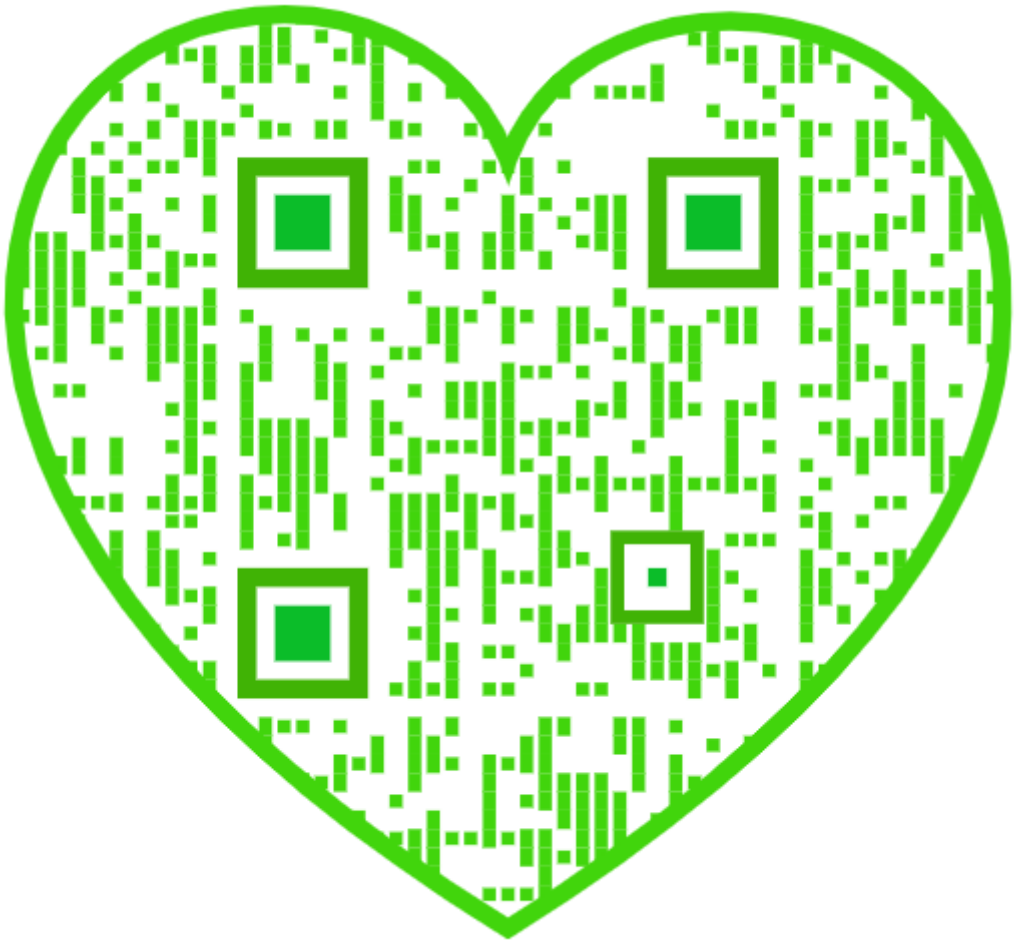

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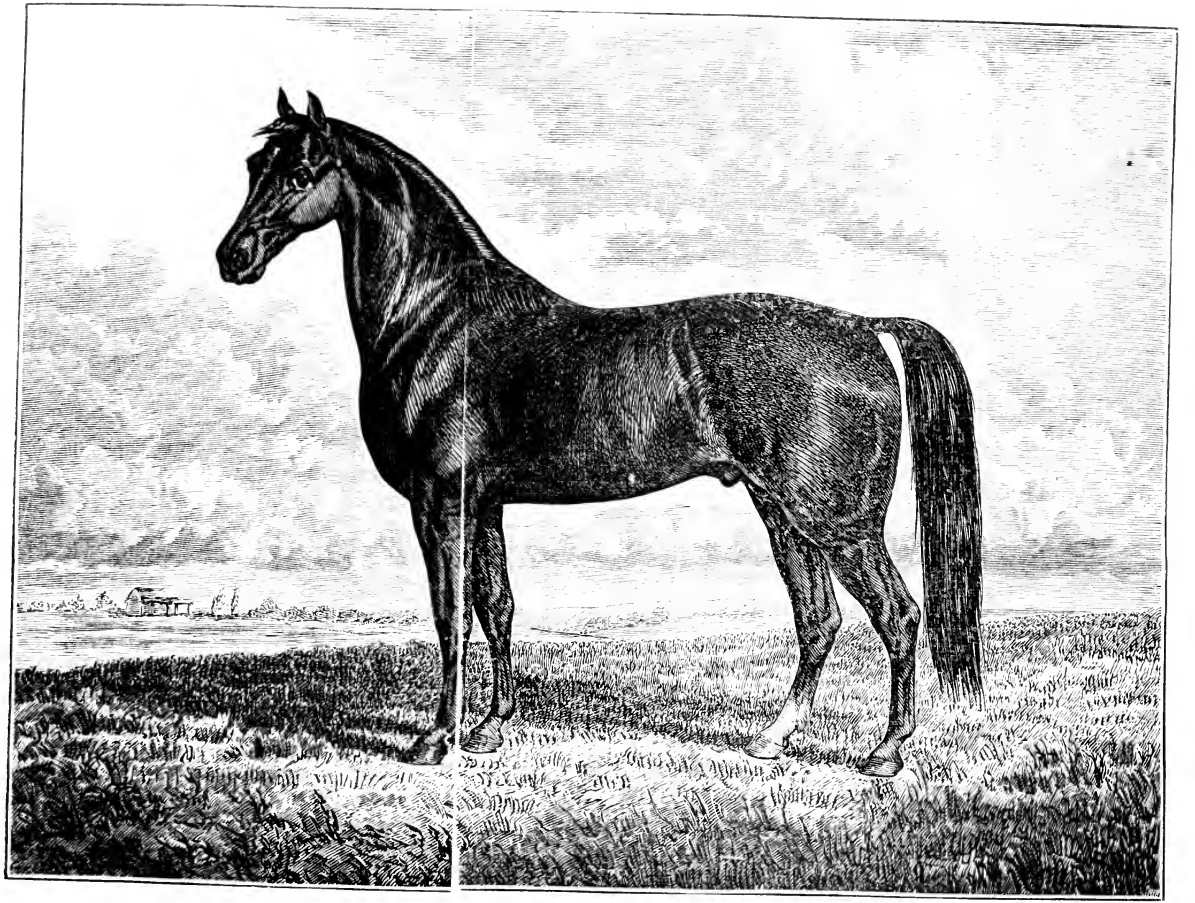

LIVE OAK.—OWNED BY W. H. H. MURRAY.—SEE PAGE 462.

THE PERFECT HORSE:

HOW TO KNOW HIM. | *HOW TO TRAIN HIM.*
HOW TO BREED HIM. | *HOW TO SHOE HIM.*
HOW TO DRIVE HIM.

BY WILLIAM H. H. MURRAY.

WITH

AN INTRODUCTION BY REV. HENRY WARD BEECHER;

AND A TREATISE ON

AGRICULTURE AND THE HORSE,

By Hon. GEORGE B. LORING.

CONTAINING ILLUSTRATIONS OF THE BEST TROTTING STOCK-HORSES IN THE UNITED STATES, DONE FROM LIFE, WITH THEIR PEDIGREE, RECORDS, AND FULL DESCRIPTIONS.

"Hast thou given the horse strength? Hast thou clothed his neck with thunder? . . . The glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength; he goeth on to meet the armed men. He mocketh at fear, and is not affrighted; neither turneth he back from the sword. . . . He swalloweth the ground with fierceness and rage. . . . He saith among the trumpets, Ha, ha! and he smelleth the battle afar off, the thunder of the captains, and the shouting." — Job xxxix. 19-25.

FOURTH EDITION.

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TO

ULYSSES S. GRANT,

PRESIDENT OF THE REPUBLIC,

AND LOVER OF THE HORSE,

I RESPECTFULLY DEDICATE

This Volume.

THE AUTHOR.

AUTHOR'S PREFACE.

I PURPOSE in this volume to treat of the most noble and useful of domestic animals, — the horse. I desire to put into a small compass and cheap form the result of many years of reading and observation, that every farmer's boy in New England may have in his possession a book which shall contain within its covers enough of instruction to qualify him to breed, train and drive, buy and sell, horses intelligently and profitably. This is my hope. I purpose, also, to lay before him the true principles of animal propagation, following which the breeding of fast and valuable horses shall be in no sense the result of chance or "good luck," as the phrase is, but of causes clearly understood and arranged from the start. I shall show him how to raise a vicious or amiable colt, a slow or fast one; what to discard and what to include in his selection of dam and sire; and how, when the perfect animal is produced, to educate him properly, and bring him forward in intelligence and docility until he is able to contribute most directly and fully to his owner's profit or pleasure. While I shall advance and strive to sustain my own views, I shall, in all cases, give my reasons therefor. I lay no claim to originality. I have no hobby to advance, or

pet theory to advertise to the public. My success, if success attend my efforts, will be due to the patience with which I have studied the subject, and the entire absence of passion and prejudice in writing out the views thus obtained. I confess my indebtedness to many books and many authors. The cumbersome volume of veterinary practice, the quaint mediæval treatise, and the sensational pamphlet of the professional "horse-tamer" who perambulates the country to-day, astonishing the uninitiated with the tricks of his trained ponies, have alike supplied me with material for reflection. I wish to give in a condensed form the aggregated wisdom of all, to the end that whoever may purchase this work shall have the sum and substance of what is known concerning the horse.

I do not deceive myself so far as to suppose that I have wholly succeeded; for the subject is a vast and intricate one, and man's performance is seldom equal to his desire. Still it may be that enough has been done to vindicate the motive, and serve the public. If this should be the verdict of my patrons, I shall rest content. If any should express surprise that one in my profession should devote his leisure to such a purpose, I have this to say, That to me it has been a labor of love in the first place for the noble animal of which I write, and whose existence and services have ever been and are to-day closely connected with the commercial, social, and religious development of the country; and, in the second place, I acknowledge the presence in my heart of a desire to associate myself in every honorable way with that class of my countrymen, to which, by birth, early education, and present aspiration, I belong, — the agricultural class. Compelled by the obligation of public life to pass the larger part of my time in cities, my mind and heart continually revert to

the country, where, in the cultivation of the products of the earth, and the propagation and training of the domestic animals, man finds, as I judge, his most honorable and happy employment. I have no sympathy with that professional exclusiveness which forbids to the intellect the powers and pleasure of general knowledge and universal studentship; nor do I ever wish to see the day, when, restrained by a false sense of professional dignity, I shall refuse to impart needed information to any one, of whatever walk and pursuit of life, who may be assisted and bettered thereby. With this purpose, and prompted by this impulse, I now send this volume forth, and bespeak for it the careful perusal of those who admire and are interested in the noble animal of which it treats.

W. H. H. MURRAY.

BOSTON, 1873.

AUTHOR'S ACKNOWLEDGMENT.

In sending this volume forth to the public, the preparation of which has been a matter of profound interest and prolonged labor to me, I wish to acknowledge the courtesy of, and return my thanks to, the scores of men, who, scattered over the country, have given me their encouragement and assistance in my work. Especially would I acknowledge the courtesy of the President of the Nation in accepting so graciously, and with such manifest interest, the dedication of the work; and the great services done me personally by Rev. Henry Ward Beecher in contributing the Introduction, and by Hon. George B. Loring in the preparation of his most interesting and valuable article.

It is not often that one can see such a grouping of names as this; and it does of itself suggest how wide-spread and profound is the interest in and affection for the animal of which they write. To these gentlemen, and to all who have aided me by favor and counsel in my effort, I regard myself personally a debtor.

W. H. H. MURRAY.

INTRODUCTION.

My dear Mr. Murray, —

What do you expect? I am not competent to discuss the mysteries of a training-farm, nor the political economy of the horse.

If, now, you needed a word on the joys of riding on winged horses, or the experience of long journeys over prairies and through Western forests on horseback, I could supply such material. I also could give you a chapter on the reverse side of the art of selecting and buying horses, so that one should be able, five times out of six, to be cheated, and pay a large price for an unsound horse. I could teach one how to buy dear, and sell cheap. But these are things aside, — the mere chaff and wastage of the subject.

I really hope that you have made a standard book: first, because you are a clergyman, and it behooves all clergymen to do well whatever they do at all; and, second, because many men think horse-culture a theme unbecoming a moral teacher. Not long ago, many people thought that good folks ought not to own good horses; that a fast horse was a sign of a fast man; and that only publicans and sinners had a right

to nags that could trot inside of 2.40; while the righteous were doomed to amble through life on dull, fat, family-horses, fit only for a plough or a funeral.

It is part of the same foolish prejudice which marvels how a preacher could write a book on horses. "Would St. Paul," say they, "pause to write on the horse?" But would Paul have written upon astronomy? or upon the history of the Jews? or upon agriculture? or on common schools? Would he have written poetry, or communications for a newspaper, or magazine-articles, or Latin grammars? If he had lived in our time, he certainly would, if he felt moved thereto, and perceived that thereby he might contribute, directly or indirectly, to the great interests of political economy as included in Christian civilization. Who finds fault with clergymen for contributing to the welfare of society through any of the great channels of influence?

From time out of mind, husbandry has been deemed a proper pursuit for clergymen. But what topic in husbandry is more important, and better worthy of dignified treatment, than the history and culture of that noble animal, the horse? Society owes to the horse a debt of gratitude a thousand times greater than it does to thousands of men who abuse him. He has ministered to progress; has made social intercourse possible where otherwise it would have been slow and occasional, or altogether impossible. He has virtually extended the strength of man, augmented his speed, doubled his time, decreased his burdens, and, becoming his slave, has released him from drudgery, and made him free. For love's sake, for the sake of social life, for eminent moral reasons, the horse deserves to be bred, trained, and cared for with scrupulous care; and, if a minister can teach men how to do

it, it is not abandoning his profession, but pursuing a remote department of it, which has too long already been left to men who look upon the horse as an instrument chiefly of gambling gains, or of mere physical pleasure.

HENRY WARD BEECHER.

Twin-Mountain House, White Mountains,
Aug. 27, 1873.

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THE PERFECT HORSE.

BY W. H. H. MURRAY.

THE PERFECT HORSE.

CHAPTER I.

POINTS OF A HORSE, OR THE MARKS BY WHICH A GOOD HORSE IS KNOWN.

To a young man starting out in the business of breeding, or to any person about to purchase a horse, nothing can be of greater value than the knowledge of those points or marks which characterize a perfect animal. Not that all of these desirable qualities of bone, muscle, and nervous organization, can be found once in a thousand times combined in any single animal; for the perfect form in any order of life is rarely if ever seen. But, nevertheless, a standard is needed by which the buyer may measure the several animals inspected, in order to ascertain where to place them in the column that represents aggregate excellence, else his blunders will be many and mortifying. The question arises, therefore, — and it is of the most practical significance to the young breeder and general purchaser, — Is there any standard or representative horse, the marks of which,

being known, would enable one to buy with intelligence and wisdom? How can one who has had little if any experience with horses go to the mart or field, and invest his money in such a way as to escape the ridicule of his more experienced companions and neighbors, and the censure of his after-judgment? I reply, that such a standard can be formed, — a standard which, when it has become known and familiar to the mind, enables it to discriminate with accuracy touching the excellences or deficiencies of every animal inspected, and qualifies a man to fix surely and at once the money-value of the animal he wishes to purchase. In other words, there are certain elements of nature, and certain peculiarities of form, and a certain style of action, which the perfect, the ideal horse invariably possesses, and which, according to the degree with which they are possessed by an animal, rank it in the column of value and price. Nor are these marks, on the one hand, so numerous as to be beyond the capacity of the poorest memory to commit them; nor, on the other, are they so latent, that, when once pointed out, they cannot be perceived by even the most casual glance. Nature does not disguise herself from those that seek to know her, nor so mask her excellences that they cannot be perceived and admired even by the careless eye. I propose, therefore, to point out to the reader those marks which characterize the perfect or ideal horse; and I do so for the sole purpose that every boy who reads these pages may have with him the knowledge which forbids blundering and financial loss

in the selection of animals from which to breed, or for general or special use. Nothing is more preposterous than the idea which seems to be current, that there is something mysterious in the art of buying and selling horses wisely, which has been hidden from the average farmer or gentleman, and revealed only to jockeys, grooms, and stable-boys. It is about time for the public to realize that the organization of the horse is too high, and his physical anatomy too intricate, for the ignorant and drunken to understand; and that the gentleman's companion, as I hold the horse to be, can best be understood and managed by gentlemen. I will now call your attention to certain elements and characteristics of the horse which the perfect animal must have.

The first, and to my mind the most essential, point to be observed touching the horse, is his

TEMPERAMENT.

I ask you to distinguish temperament and temper. The temper is an accident, the result of education or treatment; in rare instances, of birth: but the temperament is a law or mode of being affecting and modifying the physical structure and the nervous forces. The temper can be modified or changed: the vicious can be made amiable; and the amiable, vicious. Not so with the temperament: that is fixed at birth, and remains immutable, dominating over the entire organization. Diet, training, treatment in sickness, — these, and much beside, are suggested to the thoughtful mind by the tempera-

ment of the horse. There are four principles and distinct temperaments seen in horses, — the *nervous*, *bilious*, *sanguine*, and *lymphatic*. They are by nature distinct, dissimilar, and not seldom antagonistic. Still they rarely are found pure, separate. In most cases they are found to be blended, mingled, co-existent. Still, generally, one is found preponderating over all others; and according to the degree of this preponderance of the one over the rest is the constitution of the animal being inspected determined. Let us suppose that we are examining a horse with a *nervous* temperament. Such a horse will have a large, full brain, well-developed spinal column, and nerves of acute sensitiveness. From such an organization come quickness of movement, nervous excitability, and great delicacy of feeling. Such a horse will have rapidity of motion, a quick, lightning-like gather, a restless ear, and a bright, animated countenance. He will be apt to take the hills at a jump, and enter and leave his stable with a spring. He will suffer untold agonies on the application of the iron curry-comb in the careless groom's hand, and will need watching and a taut rein on the road to prevent his shying. This, in brief, is the picture of a horse with a *nervous temperament*. The Vermont Black Hawk types this class.

The next in order is the *bilious temperament*. This temperamental organization is associated with a large muscular system. The horse with a *bilious temperament* will have large bones and large muscles. The masses

of fibrous flesh about the quarters and shoulders, the shank and fore-arm, will be well brought out, and well packed in. To the hand they will feel hard and firm. Such an animal impresses you with the appearance of strength: you can see written all over him in capital letters the word "endurance." He will stand any amount of work. In strength he is an equine Hercules. Nothing but bad treatment and the passage of many years can break such a horse down, or wear him out. Such an animal was the Old Morrill horse; and like him, in a large measure, is the whole Morrill family, including his most famous descendant Fearnaught. They are all horses of great muscular vigor and power.

Consider now, in the third place, the *sanguine temperament.*

Sanguine is from the Latin, — *sanguis*, *sanguinis*, meaning blood. This temperament, therefore, as its name implies, is closely related in its origin to the blood-system, and suggests a large development of heart, lungs, and blood-vessels. A horse with such a temperament will prove long-winded. He will come down the home-stretch with wide-open and capable nostril. He will not pant and labor in aspiration at the close of the heat. Whatever, in the way of speed, he is able to do, he will do with ease. Consider, also, how closely the blood and arterial system are connected with the nourishment and support of the body. Remember that it is by the blood alone that the nutritious elements of food are disseminated through the entire system, and the needed suste-

nance carried to every part. You observe, therefore, how vital a part this order of temperament plays in the economy of the system, and how prominent a place it should hold among those characteristics and qualities which the purchaser and breeder of horses must observe in order to reach by an accurate analysis a true and proper conclusion touching the value of the animal under consideration. The horse with such a temperament will not only have excellent lungs, but he will be generally healthy: what he eats will actually nourish him; and day by day, by exercise and food, will he renew his symmetrical life.

The last of the four kinds of temperament is the *lymphatic*. A horse with this temperamental organization is to be shunned. He will be large in the abdomen, lazy, and inclined to lay on useless fat. He will be sluggish, slow-moving, and shambling in his gait; a stumbler, and kicker-up of dust; a heavy, fleshy animal, — more of a pig than a horse.

I have now enumerated the four kinds of temperamental organization peculiar to horses as to men, and endeavored to so describe and illustrate them that my youngest reader may know them at a glance. They teach us an instructive lesson; none the less so because generally unnoted by those who have attempted, by voice and printed page, to teach us concerning the structure and constitution of the horse. The lesson is this, — that by no study of the outward form can one judge correctly of this noble animal. You must push

your analysis within, you must question the nervous forces of the organization, you must knock at the portals of, and actually gain admission to, the brain of the animal, before you can judge of his value to you, or the place he holds in the column that represents comparative or absolute excellence. You observe, also, that, to the breeder, this question of *temperament* is of vital significance. The problem with him is one of judicious mingling of the three essential temperaments in order to produce the most desirable results. The nervous temperament alone will not answer. Rapidity of movement is not enough. He must breed into his colts *muscular* power; and this is represented by the *bilious* temperament.

But of what avail are quickness of motion and muscular strength, unless to these are joined capable lung-power, elasticity of the heart-structure, and that efficient arterial and venous development, by the steady and healthy action of which the system can alone be ministered unto, the wasted fibre removed, and new nerve and muscular substance daily supplied. The true point, therefore, for the breeder to consider, is this: Granted such or such a temperament to the mare, what stallion is there whose temperamental organization is of such a character, that the two, meeting and mingling together in the foal, may produce in this third organization the harmonious union of the greatest number, and in the greatest degree, of the needed and essential elements? for the relative proportion in which they

exist will have a marked effect upon the life of the animal raised, and his fitness for the especial service for which, in the mind and ambition of the breeder, he is to excel. And while these three temperaments — the nervous, bilious, and sanguine — should all exist, and meet in happy union, in the same animal, yet in what proportion they should be mingled in order to produce this happy union of speed, endurance, lung-power, and healthfulness, is to the breeder a matter of momentous importance; for on this, beyond all else, as we think, and trust our reasoning proves, failure or success depends.

Did the contemplated space of this work permit, I could show that this matter of temperamental organization of the horse potentially affects the entire animal, — even every minute point of the physical structure, and each separate part and function of the body. If the temperament be an active, lively one, then will the bones be fine in their texture, ivory-like, and lasting. The muscles, also, will be influenced, and become wiry, compact, and elastic as spiral wire. If the temperament, on the other hand, be sluggish, heavy, lymphatic, the bones will be spongy and porous in their structure, the muscles flaccid and coarse, and the nervous organization low, dull, and inoperant. I am well aware that size, all else being equal, is a true gauge of power; but let it never be forgotten by the breeder and purchaser of the horse, that "all else" is not equal. Size alone is no measure of power; for all can see, even with the most

casual examination of the subject, that the slightest alteration in temperament makes a corresponding alteration in the power and efficiency of every individual part. A horse does not draw by virtue of his weight, nor in proportion to his size. The public scales and the measuring-tape can never assure us how much a horse can draw, or how many miles he can pull a wagon and its owner in a day. Muscular action and nerve-force must be considered; and these are both closely allied to, and dependent on, the temperament of the animal. The well-bred horse, inch for inch, and pound for pound, is far stronger than the dray-horse; and old Justin Morgan, the founder of the most wonderful family of horses (all things being considered) this or any country ever saw, could draw logs that horses of twelve and thirteen hundred pounds could not even start, albeit he weighed only about nine hundred pounds, and stood barely fourteen and a half hands high. It is the amount of *vital* force, that at the end of a stick of timber, or a weary day's journey on a heavy road, tells the story.

Having ascertained the *temperament* of a horse (that is, the inner characteristics of his nature and being), let us now examine the outward conformation, and those physical marks which meet the eye of the buyer. What is that *form*, and what should be the shape and relation, one with another, of the several parts of the body, in order to secure in the highest degree the things most to be desired in a horse? Let us begin, then, to pass in

review those *points* or *characteristic marks* of a horse which assist the judgment in forming a correct estimate of his real worth. And, first of all, let us carefully consider

THE HEAD.

The head is the glory of the horse, as it is of man. Through it the vital forces look out upon the scene of their exercise and their triumph. The passions and emotions use it as their interpreter; and every mood and feeling run to it for advertisement. If a man's soul, as it has been claimed, can be judged by his face, a horse may be known by his head. Granted a certain conformation, and you will have viciousness; granted another, and you have amiability. Next to the human face, the countenance of a horse is most expressive of the qualities within, and the most beautiful form of animal life. How grave, how cheerful, how amiable, how vicious, how playful, how positive and determined, the countenance of the horse can become! What brightness and vivacity, what majesty and courage, what energy and terrible power, the look and countenance of the horse are capable of expressing! No wonder that it has always been a favorite subject for the brush of the artist and the chisel of the sculptor, and deemed worthy by the inspired writers to adorn the poetry of the Bible.

The first thing for you to consider, reader, when examining a horse in judgment, is his head. First of all, get a good front view: observe the distance be-

tween the ears, the length and curvature of the same, the space lying between them and the eyes, the eyes themselves, the cheek-bones, the muzzle, the nostrils and lips. Then step to one side, and scan the head in profile. Observe the way it is joined to the neck; its balance and pose, the conformation of the jowls, the nose-line, and the make-up of the lower jaw and lip. Do all this before you have even given a glance at the body; for by the study of the *shape* of the head and the look of the face, beyond any thing else, will you be able to decide touching the *temperament* of the animal, which, as I have shown, dominates for good or ill over the entire organization.

If you wish to decide whether a man is a kind husband, a good father and courteous neighbor, honest and industrious, cheerful and happy, a delight to all his friends, and a useful member of society, look at his head, and not at his body. It is the head and face that reveal to us the character and relation of those nervous and vital forces which really represent the man, and not his legs or chest, or bone and muscular structure. So it is with the horse. He, too, is an animal of high organization, endowed with a large degree of intelligence, capable of forming strong and enduring attachments, subject to moods and tempers, and distinguished by the quickness and strength of his impulses. The right or wrong adjustment of these forces represents his value, and gauges the degree of his worth or worthlessness. The bones and muscles are mere servants of these high

and efficient forces, and used by them at will as a slave is directed by his master to serve or kill his guest. Never can a man be a good judge of a horse so long as he looks upon him as an animal of low organization, composed merely of bones, muscles, fibre, and flesh, and represented by these. Such a view of swine is correct; but such a view of horses is most erroneous: and yet many buyers who deem themselves in every way competent to select good horses, and plume themselves on their ability to "buy close," never look farther into the organization of a horse than to examine his legs, feet, shoulders, quarters, and muscles, — the mere *material* and *lower* part of the animal; while the qualities which really in fact represent the *horse*, and decide his comparative value, are taken for granted.

I select the following description of the head of a perfect horse from a little volume written by James C. L. Carson, M.D., of Coleraine, Ireland, published in 1859 (a little book, by the way, from which many compilers of books on the horse have copied about all the sense there was in their works, without giving him the credit of it), because I would like to bring this book into notice, and because the description harmonizes, point by point, with my own ideas of a perfect head. He says, —

"The *head* of every horse should be as small as would be in keeping with the rest of his body. A large, coarse head is a defect, in every person's eye; and it has no advantages to counterbalance its deformity.

The *muzzle* should be fine, and of a moderate length; the *mouth* invariably deep for receiving and retaining the bit; and the *lips* rather thin, and firmly compressed. A fine, tight lip is a pretty sure indication of an active temperament, and consequently affords a measure of the energy and durability of the animal. Horses with short, thick, flabby lips, lying wide apart, are proverbial for sluggishness. The *nostrils* should be large, so as to be capable, when open, of allowing the air to have free access to the lungs. In conformity with the uniform condition of the Creator's works, it will be found that there is a direct relation between the development of the nostrils and the capacity of the lungs for air. Hence arises the necessity of observing the size of the nostrils. Capacious lungs would be of no use if the orifice which connects them with the external atmosphere were so contracted that they could not get properly filled. The race-horse must have very wide and dilatable nostrils to admit a large volume of air, with the utmost freedom and greatest speed, into his widely and rapidly distended lungs; but the horse of slow work can take more time in his breathing, and consequently does not require such a very large nostril as the racer, hunter, or steeple-chaser. Care must always be taken, recollect, not to confound a naturally well-developed nostril with one which looks large in consequence of having been kept in a state of permanent distention by disease of the lungs or air-passages. The *muzzle* ought to be fine a good way up; and then

the parts should enlarge suddenly, in order to give plenty of breadth to the under-jaw, as well as thickness from side to side. This is a point of great beauty, as it gives breadth to the jaw-blade, and breadth from eye to eye, whilst the fineness of the head generally is maintained. A head that is narrow between the eyes, and narrow on the side of the jaw, is painfully disagreeable to the eye of every judge. The *space* between the two blades of the under-jaw ought to be so broad and so deep as to freely admit the lower edge of the neck when the chin is reined in towards the counter; but it should not be wider than this, as it would then appear coarse. If there is sufficient room in this locality, the horse can be reined up to the proper pitch without stopping up his windpipe. The *face*, on a side-view, should be dipped in the centre between the eyes and the nose. This is generally the case in the Arabian and English blood-horse; and it is a much more beautiful formation than either the straight or convex profile. However ornamental it may be to the human face, a Roman nose certainly does not improve the appearance of the horse. The line of beauty in the one case is very different from the other. A dish-faced horse is admired on all hands; but a pug-nosed man, with a projecting, upturned chin, will have some difficulty in carrying off the prize for beauty. The face must be very broad between the eyes; but it should taper a little as it approaches the ears. If the breadth is carried all the way upwards, the top of the head will be too wide, the

ears ill set, and the horse probably sulky. Now, in respect to the head, it also should be examined in detail, for in it are distinct organs having distinct uses, and each contributing its share to the proper understanding of the animal to which they belong, and to which they serve. But, of all these organs, perhaps the eye is the most expressive and characteristic of them all. Through it, in all the different phases of animation and repose, we most directly behold the mind of the horse, and the character of that disposition, the various moods of which are revealed through the eye. And this will not appear strange, that, both by its location and office-work, it is in close and direct communication with the brain. It might well be called the window, through which we can look, and behold the activities going on within, and which would be forever hidden from us were this friendly window darkened. The eye of the horse should be kindly, bold, full of suggestions of latent heat and fervor, but spread over all a mild and gentle look. I do not favor myself an eye ringed with white, for this suggests timidity or mischief; although I have known subjects in which this eye was seen, and the animal was at the same time entirely free from fault. Still, in the main, I hold that this judgment is correct, uttered by one wise in horse-craft, that 'a horse which is always looking back so far as to expose the white of the eye is generally on the alert for mischief, and is not to be trusted with his heels.'"

As to the size of the eye, I suppose that eyes are

nearly of the same measurement in all horses; but the *apparent* size differs widely in different cases, and this difference springs from two causes as we understand it: first, whether the eye is set well forward or backward as to its position in the socket; and, in the second place, to the thinness and openness of the eyelids, or the reverse. The eye should set well out, yet not so far as to be exposed to outward injury. I think too little attention is paid to the color of the eye, because from this, as we think, can be judged the character of the temper. A little observation on the part of the reader will substantiate this, or prove us to be in error.

As to the

EARS,

I would observe that they should be thin, not over lengthy, free from long hairs, curved a little inward at the point, and full of vein-tracery. They should be rather close together at the base, strongly set on, quick and lively in movement, and covered with fine, short hair. You will never find an indolent, sluggish, heavy-moving horse blessed with such ears.

I think also, but to a less degree, the *color* of the hair should be considered. I do not think that color is a mere matter of taste, as some assert. We know that the color of a man's skin does assist one in forming a correct judgment as to his temperament.

We know that the florid complexion denotes the sanguine temperament; that with the darker skin we associate the bilious temperament; and the chalky hue

points to the lymphatic. Why should this not hold true in relation to the horse? We believe it does. Other things being equal, I should not select a sorrel horse, nor a white-haired horse, nor a jet-black. I do not regard these as *hardy* colors. I should prefer rather the rich chestnut, the deep blood-bay, or a handsome brown. The former colors suggest scrofulous constitutions and imperfect blood-conditions; while the latter point to fineness of bone-texture, and perfection of the venous system.

The portion of the head lying between the eyes and the ears is worthy of the closest possible attention; for it is the section occupied by the brain itself, — the seat of all intelligence, docility, and motive-power. This section of the head can scarcely be too full. I would never breed a mare to a stallion deficient at this point of his structure. I want no colts from a sire with a flat forehead; for such a horse is a savage, sulky, detestable brute. To start with, he will have no memory: he will forget to-morrow what you taught him to-day. Even if he wished to remember it, he could not; for he is incapable. To a bad memory must be added a bad disposition. He is sour, cross and crabbed, tricky and malignant. His cunning is not playful, but mean; and his tricks are tricks of cruelty. No one ever saw a horse, with such formation of front, tractable and trusty. But if, on the other hand, you meet a horse with a bold, prominent forehead, a noble fulness at that point where the brain is lodged, you will find him to be of a docile

and silky disposition. You can teach him any thing; and, when once taught, he will rarely if ever forget. Indeed, his great intelligence suggests to his owner a caution: Never teach him to do any thing that you do not desire him to do always and at all times; for whatever he has once acquired you can only with great difficulty eradicate. I do not wish to be understood as saying that every horse with a fine brain development is gentle; for he may have been trained under a system so essentially vicious, that no natural amiability could withstand its savage friction: but this I *do* wish to be understood as saying, — that every horse with this full and fine brain development is by *nature* courageous, docile, and loving; and that, if they ever become otherwise, it is owing to the vicious management of those who have them in charge.

THE NECK

is the next portion of the horse to be considered. Nor do I think that sufficient attention is paid by would-be horsemen to it. It is evident that much of the beauty of the horse is associated with the neck. If it is too thick, or too straight, or too much arched and drawn back, the entire appearance of the animal is changed and marred. It is also to the shape of the neck that we look for traces and proof of the animal's breeding. According to its length, moreover, is he easy to the hand in driving, and safe in saddle-work. In the first place, the head and neck must have a certain adjust-

ment; and this must be of such a character as to cause the nose to project forward, and out of the line of the perpendicular: still the projection must not be too positive, else the horse will be what is called "a star-gazer." Such an animal not only has a vicious appearance, but is difficult to manage, and is actually unsafe; because the bit, which should keep a safe purchase on the lower jaw, will be drawn up into the angles of his mouth, so that the reins have little or no control over his course, and he can go how and whither he pleases.

Concerning the length and thickness of the neck I have this to observe; viz., the same neck is not desirable in every horse, but should vary somewhat according to the service to which it is to be put. For speed the neck cannot be too light, provided that it allow sufficient room for the passage of wind and food. All weight carried here is dead-weight; that is, weight that does not help propel the horse, and should, consequently, be bred away. The model neck, in this respect, is found in the thorough-bred English racer; and to this pattern the American breeder should strive to bring the neck of the trotting-horse. The Morrill neck, the Hambletonian neck, the French or Canadian neck, and, for the most part, the average neck of the American trotting stallion, is by far too gross and heavy either for beauty or for speed. But observe at this point, that, while the large neck is disadvantageous for a horse kept for speed, in the case of the harness-horse and carter, thickness of neck at the base, where it enters the shoul-

der, is both desirable, and actually essential. This caution should always be kept in mind, that both length and lightness must not be pushed in breeding to an extreme, for fear that, in so doing, constitutional weakness would be the result.

The centre of the neck should be decidedly thicker than either the upper or nether edge, and grow in thickness as it approaches the shoulder; for this thickness at the centre of the neck is suggestive of muscle. At the other end (viz., at the jowls) the neck can hardly be too thin. In formation along the upper edge, the neck should rise from the withers in a free and noble curvature, which, connected with the desirable length, will insure beauty of appearance when being ridden or driven, and a mouth easy to the hand. Nor is this length and curvature of the neck a mere matter of beauty, and easy subjection to the driver's will; but more yet is it desirable, because this formation is alone consistent with that true balancing of the body on the legs by which gracefulness of motion, and freedom from stumbling, are secured.

We now come, in our analysis and description of a perfect horse, to what, perhaps, stands second only in importance to the brain; viz.,

THE CHEST.

The reason why this portion of the horse is so important, and the accurate understanding of it so desirable, to the breeder and purchaser, arises from several causes.

And, first, because it is the home of the heart. The heart, please remember, is the centre of the entire blood-system of the body. By the blood which it circulates alone can the structure be nourished and sustained in vigor and health day by day. By it, also, alone can the effete substance which is constantly accumulating in the system, as the result of every motion the animal makes, be collected, and discharged from the system. It is to the heart, therefore, you see, that we are indebted for whatever needed element is added to the system, and whatever unneeded and harmful element is removed therefrom. Heart-health means muscular health, bone health, universal health. Heart-disease means weakness of the muscles, unreliable bone substance, and a more or less impairment of the entire system. Whatever concerns the heart, therefore, and whatever affects it, directly or indirectly, for good or ill, is worthy of the closest attention. Especially the chest, — in which the heart is lodged, by which it is protected, and which either cramps it, or allows it the needed liberty of action, — as it is properly or improperly formed, challenges our inspection.

In the second place, the reason why the *chest* of the horse is worthy of the horseman's most careful study is because it is the cavity in which Nature has located the lungs. I shall, in another portion of this work, treat more fully of the use and condition of the lungs. But this much I will observe at this point: the blood which is circulated by the heart can be vitalized and

purified only by coming in contact, in passing through the lungs, with atmospheric air. When quiet, the blood in an animal's body moves through the circulating channels slowly, and respiration is performed easily: but in exertion the circulation is quickened; the blood is pumped in and shot out of the heart with great rapidity; the breathing becomes labored, and a fearful pressure is put upon the lung substance; the multitudinous air-cells are dilated, and exposed to a strain which nothing but the strongest possible texture can withstand. In addition to this, the reader must bear in mind that the blood that is brought back to the heart after having gone the rounds of the system is in an impure condition, and can only be purified by the oxygen taken with every breath into the lungs; so that the lungs and heart work, as it were, in unison, and are mutually dependent one upon the other. Every ounce of blood circulated by the heart must receive a certain amount of air from the air-cells of the lungs; and, as the rapidity of the circulation is gauged by the degree of exertion put forth, it follows that the capacity of the heart and lungs decides, in a great measure, the amount of exertion which the horse can put forth. To illustrate: The faster he goes, the greater the number of heart-beats and the amount of air required; so that the capacity of the heart and lungs really decides (the proper temperament and muscular strength being granted) the speed of the horse. Hence the necessity of paying special attention to the shape and size of the chest, in which the heart and lungs are placed.

I am not writing a minute anatomical description of the chest; and I need only say that it is bounded on the front by the neck, on either side by the shoulder-blades and the ribs, underneath by the breast-bone, above by the spine, and in the rear by the diaphragm, which acts as a division between it and the intestines. Draw a line from the hindermost point of your saddle until it touches the back-side of the girths, near the breast-bone, and you see with sufficient accuracy the position of the diaphragm. It is a large sheet of muscular tissue, reaching from side to side in such a way as to completely divide the power separating it into two great cavities. It is pliable in texture, and, when moved backward or forward, lessens or enlarges either of the cavities between which it is drawn. The front one of these two cavities is occupied almost entirely by the heart and lungs. Here they dwell almost alone in the home which Nature has provided for them, and which they monopolize. The heart is small in size, and alters little, whether in repose or action, sickness or health. Not so with the lungs: they expand and shrink with every breath. In their substance they are highly elastic, and capable of being enormously distended; and each distention is followed with a commensurate collapse. To accommodate this mighty expansion, which results from every aspiration made by a horse when in violent action, Nature has made a wonderful provision. When the aspiration begins, the arch made by the ribs is elevated, and the diaphragm is drawn back, in order that the cavity between them

may be enlarged to accommodate the expansion of the lungs. When the ribs are lifted, and the diaphragm drawn back, the lungs swell out, being inflated, and fill the enlarged chest; and the air rushing into the air-cells of the lungs, and then coming in contact with the impure blood waiting to receive it, purifies it, and is then discharged through the windpipe, from the nostrils. The lungs are thus reduced to their former size, and the chest shrinks to its normal proportion. This is the process of breathing; and upon its proper performance depend the health and usefulness of the horse.

An old horseman has well expressed it thus: "Wind," says he, "is the grand secret of a fast horse. Good lungs will cover a multitude of faults; whilst, on the other hand, perfection of shape and form are useless when the wind is out."

The chest, therefore, in all cases, should be large and capacious. In shape it may vary somewhat, according to the service to which the horse is to be put. If he is kept for slow work and heavy drawing, the chest may be nearly circular in form, because this shape is the one for strength and bulk, to receive and bear up against the pressure of the collar; while, at the same time, sufficient room is secured for that expansion of the lungs caused by slow and regular work. But, if the chest is circular, let it be at the same time deep, or else the lungs may be cramped. A horse with a shallow chest is worthless for any purpose. The rule, then, is this: For a draft-horse, a circular but deep chest; but as you pass through the

different degrees of speed, up to the racer and trotter, the chest must increase in depth compared to its roundness, until, for the highest rate of speed, you must have a chest as deep as a greyhound, and, at the same time, not lacking in breadth. Every breeder should keep this rule in mind when selecting his brood-mares and stallion; for he may be sure that shallow-chested parents never beget deep-chested colts. In order to illustrate the faultiness of the *circular* chest, an ingenious writer has put it thus: —

"Take, for example," he says, "a piece of pasteboard, and form it into a cylinder about six inches in length, and two inches in diameter; leaving it open at both ends, so that it can be compressed equally from end to end. Place one end on a table, and compress two of its sides until the cavity assumes a perfectly oval or elliptical form, and then fill it accurately with fine shot. When it is nicely filled and levelled on the top, remove the pressure from the sides, so that the pasteboard may again form a perfect cylinder; and it will be found that the shot is not nearly sufficient to fill the cavity. Now, as the quantity of pasteboard remains exactly the same during the entire experiment, it is quite plain the change of capacity is owing solely to the change of form.

"Let us suppose, then, that a horse has a perfectly circular chest; and it will follow, as a necessary consequence, that the elevation of the ribs on the side, in place of increasing its capacity, will actually lessen it,

by bringing it more or less into the elliptical form. In this case the cavity of the chest would be larger when the breathing would be suspended than at any other time, because its original shape was such as not to admit of an increase of size by any change of form. The farther it would be changed from the cylinder, the smaller it would become. But if, in the first instance, the chest were a great deal deeper than broad, the elevation of the ribs on the side would just serve to bring it into the circular shape, which is the most capacious of all. Hence it must be evident that depth of chest is indispensable in all cases.

"As the lungs of the horse occupy a much larger space when he is in active exercise than when he is at rest, we are justified in concluding that he requires to have the power of increasing the size of his chest in proportion as he is called upon to increase his speed. Contrary to the popular opinion, the chest must, to a certain extent, be flattened on the sides, in order that it may be capable of being changed from the elliptical into the circular form. The horse for very slow work may have his chest approaching the circle, because the trifling elevation of rib which is required by his quiet mode of breathing will only be sufficient to complete the circular shape. Whilst he may do with this kind of chest, it cannot, however, be considered advantageous, as a greater power of wind might often be of decided service to him, and could never be injurious. The depth of the chest, when compared with its width,

must invariably increase in direct proportion to the increase of speed and distance required of the animal. In the steeple-chaser or the flat-racer it should be of enormous depth, in order that the elevation of the ribs may assist in forming a capacious circle, for the purpose of accommodating the rapidly and frequently distended lungs during the trying period of the race. In such cases a round chest would be of no use, as the wind would be completely pumped out of the horse before he had gone half the requisite distance." — *Carson on the Horse.*

The best form the chest can possibly take in a horse used for speed is the following: It should be wide above, moderately so below (near the breast-bone), and slightly flattened, but very deep, along the sides. Such a shape to the chest will enable him to trot his mile in 2.20, and be free from pain at the close of the decisive heat.

I might pursue these remarks much farther; for the subject is profoundly interesting to the student of the horse, and I have by no means exhausted it: but my space is limited; and perhaps enough has been said to give the reader, and young purchaser and breeder, the main, essential points most worthy of attention. But, before I pass to another section, I caution all would-be breeders of fast and enduring horses, whether for the racing or trotting course, as also all on the lookout for a fast horse for their private use, to remember that that portion of the horse where Nature has placed the heart

and lungs should receive at their hands the closest inspection: for a merely circular chest, or a narrow, pinched, and shallow chest, does not give heart and lung room enough; and without this there can be no high, prolonged rate of speed.

After the head, neck, and chest have been duly inspected, and their excellences or defects remarked, the buyer should turn his attention to the

BONES,

in order to ascertain whether they supply the animal with the needed upholding and supporting power, not merely when at rest or in easy action, but when, in his high flights of speed, he delivers his strokes with the energy of a locomotive. For when a horse, weighing, perhaps, eleven hundred pounds, comes rushing down the course, the shock to his bone structure, as represented by his legs, is something beyond our power to realize; and how such a small column of bone as the canon-bone, for instance, can sustain the blow, I have never been able to comprehend.

The first point for the student of the horse to bear in mind is, that the *size* of a bone does not give the true measure of its strength, but rather the *size* and *texture* both. The leg-bone of a thorough-bred horse, as all know, is much smaller in size than the leg-bone of the cart-horse; but, at the same time, it is many times stronger. The reason of this is, that, in the one case, the bone is coarse and porous in its texture; while in

the other it is fine, dense, and compact. A section from the canon-bone of a low-bred cart-horse, after being exposed to the action of the atmosphere, is seen to be, when held up between the eye and the sun, spongy, porous, and full of holes: while a section from the canon-bone of a thorough-bred horse is solid and hard as ivory; so much so, indeed, that it will take a polish like a piano-key. This fact reveals the whole story, and prevents all future blundering. Of course, a certain size is requisite; but all above the absolutely needed amount is only unnecessary weight, which, without giving any assistance to the animal, he is compelled to carry along. Now, when you reflect that the difference of even ten pounds in the weight of two drivers will lose the heavier driver's horse the race, albeit he is in every respect equal to his rival, you will readily perceive how important, when we come to the matter of speed, this point of bone-weight is: for it is as bad to weight the horse in the limbs and neck as it is in the sulky; nay, worse; for it exhausts the horse more to carry ten pounds of lead, we will say, fastened to his legs, or tied around his neck, than to draw it on wheels. I advocate, therefore, the breeding of colts with as slim neck as is consistent with constitutional endurance, and with as small limbs as comports with strength; for this reason, if for none other, — because every ounce of unnecessary bone substance and flesh about the neck is so much dead-weight for the horse to carry. But beyond this is the question of beauty, which, none will deny,

points directly to fine-bred limbs, neck, and head. I urge all my readers to remember this also, — that no one can be a good judge of the horse, no matter what his pretensions are, unless he is perfectly familiar with the size, length, and proper position of every bone in the skeleton: for they are the props and levers of the entire structure; and on their shape, length, position, and texture, the capacity of the animal for any allotted service depends. I will now ask your attention to the

SHOULDER.

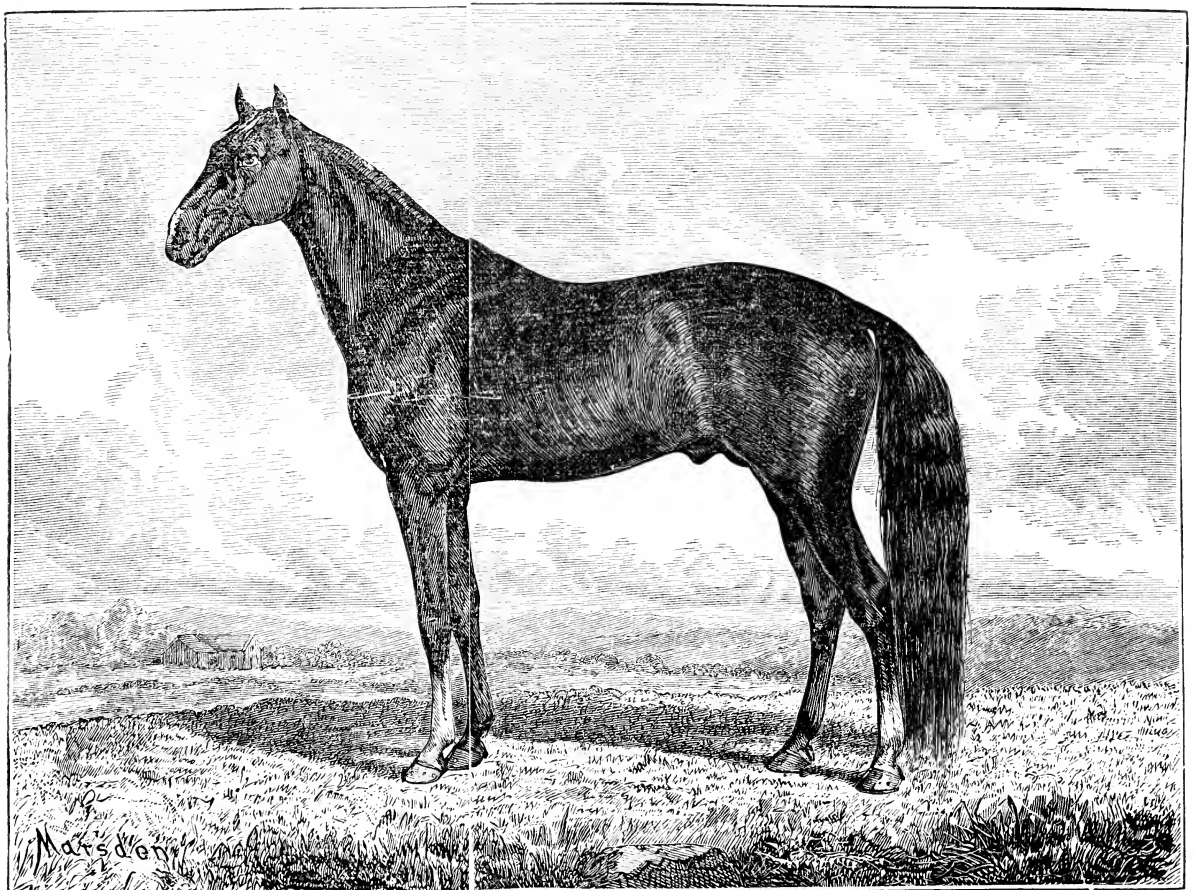
There is no one type of shoulder, either as to its bone and muscular structure or its length and position, which may be called the perfect shoulder; because, beyond almost any other part of the horse, the shoulder is to be considered in relation to the service required of him. Hence it becomes necessary for one to make himself acquainted with the several *kinds* of shoulder; each of which, in their way, is the perfect shoulder for the work to which it is adapted. This prime fact is often overlooked by the purchaser and breeder in his selection of horses and brood-mares; and hence the more need of some remarks, at this point, upon it.

A draught-horse requires such a construction of the shoulders as to offer a fine and abundant resistance to the collar, and so shaped as to fit it evenly; thus distributing the pressure over the entire surface, with weight enough to assist the hind-quarters in moving the enormous loads which the animal is often called

upon to draw. To meet these several wants, Nature, whose results are always such as the highest reason would suggest, builds an upright, thick, and heavy shoulder formation, so rounded and filled out with muscles, flesh, and fibre, that the pressure is not borne by that point where it begins when the horse "settles into the collar," but is carried up and over the entire resisting surface. This, to a heavy draught-horse, is a "perfect shoulder;" and no amount of excellence in the other parts of the animal's organization can make good any variation from this construction of the shoulders. Such a horse will be a "great puller," but heavy and slow of movement, and utterly incapable of speed beyond a kind of ox-like trot. For the purposes of lighter draught the shoulders should be lighter, less circular, and more oblique, with a decidedly higher wither; for this variation in the shoulder formation will qualify him to do moderately heavy work, and at the same time enable him to move more lightly and quickly. This modified draught-horse is the one for general farm-work, and family-service on the road. The old Morgan type of shoulder formation — such as Justin Morgan had, for instance — is the best possible form for such service, and which, in connection with the other excellent qualities he possessed, made that horse able to move a heavier dead-weight than any other horse of his size of which we have any record.

The horse destined for the saddle and carriage service should, on the other hand, have an altogether different

formation. The shoulders should be quite oblique, and the withers high. This height of the withers is essential, because this conformation assists the horse in lifting his fore-quarters over impediments he may meet in his course in road or field. No horse with high withers, if otherwise well made, ever stumbles, or trips even. His action will be high and safe. The obliquity (slope) of the shoulders adds to his capacity to stride, and also to the rider's or driver's ease. In the case of the rider, the saddle-seat is thrown back far enough from the fore-shoulders to insure pliancy, and to escape the jolt, which, if seated farther forward, he would be sure to receive. When a horse with low withers stumbles, the rider is thrown forward so that the line of weight is ahead of the fore-legs; in which case it is next to impossible for him to recover his horse. There are other reasons why the oblique shoulder and high withers are to be preferred; but those already mentioned are sufficient to suggest to the purchaser and breeder what conformation of the shoulders is most desirable. The law, therefore, is, that in the case of roadsters and saddle-horses, or gentlemen's driving-horses as the phrase is, the withers should be thin and high, and the shoulders very oblique. But in the case of the horse to be bought and kept solely for his speed, or where the breeder is anxious to breed a 2.20 colt, speed being the sole thing aimed at, I should *breed down the withers decidedly;* because, in order to insure the highest rate of speed, it is essential that the horse should go close to the ground, — "go low," as the saying



MANCHESTER.—OWNED BY WRIGHT AND NORCROSS, MANCHESTER, MAINE.

is; and this no horse with high withers can do. The point is this, — that a low-going horse loses less time in his stride than a high-going one; and this fractional variation, however minute, counts in a race where the horse is timed to, and can only hope to beat his competitor by, the fraction of a second. Hence many horsemen of close observation prefer a horse whose rump is quite as high as the withers, if not a little higher; and I confess to an agreement with them in the matter. But however men may differ upon this point, still I think all will agree in this, — that it is most unwise, in selecting a horse solely for speed, to choose one higher forward than behind. Such a horse can never win a race, where, in other respects, his rival is his equal.

Be this, moreover, observed, that it is exceedingly easy for one to misjudge touching the length and obliquity of the shoulders; and this is done in five cases out of ten when you base your decision on the appearance of the withers and upper portion of the shoulder. The height of a horse's withers is not a true index of the position or length of the shoulder-blades, or of the depth of his chest. Many horses with high, thin withers, and *apparently* sloping shoulders and deep chest, have, in fact, very upright shoulders, and too little chest-room to accommodate the heart and lungs; while, on the other hand, many horses with low withers and *apparently* circular shoulders have the best possible shoulder conformation for wind and speed. This is the case especially with some of the French or Canadian trotters, and with the whole Morgan

family, which, in our opinion, have produced more rapid trotters, all things being considered, than any other branch of the American trotting family. And in proof of this, although the *data* gathered are not by any means complete, and do not show the family to the best advantage of which it is capable, I would refer the reader to that section of this volume in which I discuss the Morgan family at length.

There are two bones which in the skeleton represent the shoulder, and which are of such importance as to deserve prominent mention; the uppermost of which is called the *scapula.* This bone, beginning at the edge of the withers, runs downward until it makes an angle with the next succeeding bone (the *humerus*), near the front-breast. Two points in reference to it should be especially noted: first, it cannot be too long for the purposes of speed; secondly, its upper extremity should lie in as close as possible to the ribs and spine. The scapula is a wide, flat bone embedded in a great mass of muscles, and so protected by Nature as to be almost invulnerable to any shock or wrench. In ninety-nine cases in a hundred, "shoulder lameness" is in reality a lameness in the foot or lower bones of the leg, no matter what the "horse-doctor" of the neighborhood may say. I have never seen an instance of *bonâ-fide* shoulder lameness; although I have seen scores of horses being treated for that complaint. As a peculiarity of construction, and as evidence of that supreme wisdom with which God through Nature acts, it should be noted that the shoul-

der-blade is not connected to the framework of the body, as all other bones are, by the cartilages or joints, but is attached to it by means of muscular substance only. It is literally slung or wrapped up and held by a mass of muscle. This is the reason why it is so difficult for any jar or wrench to hurt it. The upper edges of the *scapula* cannot, by any pressure or blow, be driven up against any other bone (the spinal column or ribs), unless by a blow that should literally drive it out through the skin, and tear it from the body. By this arrangement, Nature has amply provided both for its own protection, and also for the ease of the rider, in that the shock of the gallop or jump is thereby reduced to a minimum. A writer has well said, "If the smith were aware of this fact, he would not trace to the shoulder, as he is apt to do, one-half the diseases that are located in the foot and leg. By referring the lameness to the shoulder, he can account easily to the owner of the horse for the result of his bad shoeing." Precisely.

Of the second bone in the shoulder — viz., the *humerus* — it is not necessary for me to speak, save to say that it should be of good length, and well slanted upward toward the scapula. Nothing remains, therefore, for me to mention, in connection with the shoulders, but the *muscles.*

These — by which I mean all connected with the shoulder — cannot be too large or powerful, no matter to what use the horse may be destined. Every ounce of strength here *tells.* I like to see a shoulder packed in

and laid over with great layers and masses of muscle; none the worse, but all the better, if they reach up as if they would overlap even the withers. What we want in this locality of the animal's frame is *substance, quantity.* Some admire thin shoulders: not I. Such shoulders look best when you start on a long drive: they don't look so well after you have made sixty miles, with ten more still to make. Light fore-quarters mean *weak* fore-quarters. A horse has to *lift himself* every step he takes, remember: and this is hard work when continued for hours, mile after mile; and nothing less than a splendid muscular development about the shoulder will enable him to do it. But be sure in your inspection that the thick, strong look of the shoulder formation is owing to the presence of muscle, and not to the fact, as is often the case, that the shoulder-blades are set loosely on to the frame, and wide apart. This is a vicious conformation for a horse, and a sure evidence of weakness in the fore-quarters, from which no diet, or care on the part of the owner, can ever deliver him. Run your fingers under the upper point of the *scapula*, and see if it is set *close in* to the spinal column and ribs: if it is, and the horse still "looks thick" through the shoulders, buy him; if not, look farther.

We will now proceed to the examination of the fore-leg; and in this fore-leg are two bones to which I wish to call especial attention, — the fore-arm, or radius, as it is sometimes called, and the large metacarpal or canon bone, as it is popularly named. Lying between these, at

the junction of the knee, are the three carpal-bones, of which we need not speak. In reference to the fore-arm we observe, that it can scarcely be too long, or too heavily clothed upon with nuscles; for all the muscles which move the leg and foot are located here. Now, please remember that the muscles are the only moving power in the animal, and that all the muscles to lift and extend the foot and leg are placed along this fore-arm, and you will at once conclude that the size and fashion of the fore-arm is a matter of the utmost importance. No strength of shoulder can make good a defective development of those muscles wrapped around the radius; because the strength above cannot make good the lack of strength below. Mr. Youatt well says, that, "whatever other good points the animal may possess, if the arm is narrow in front and near the shoulder, flat on the side, and altogether deficient in muscular appearance, that horse is radically defective. He can neither raise his knee for rapid action, nor throw his leg sufficiently forward."

The arm should be large at the point of union with the body; taking a strong hold, as it were, of the trunk, in order to give a sufficient basis for the attachment of muscles. On the back part of the top of the arm, where it joins the body, is a projection of bone, called the *elbow*. Without explaining the reason why, — because it would require an examination of mechanical principles not within the province of this book, — I would say, that it is of the greatest importance that

this projection should be broad and strong, and reaching well back from the front of the arm. If you will examine closely the fore-arm of a horse, you will observe that in it are three masses of muscles, the location and use of which are as follows: One is placed on the outer edge of the fore-arm, in front; the second lies directly behind it: and these are employed to extend and bend the limb. The third lies inside of the fore-arm, near the junction of the leg and chest. The office which this muscle fulfils is this: When the horse is in motion, it confines the arm to the side, keeps it in a straight line, and makes it impossible for the heavy pressure from above to separate the legs too widely. You see that all of these muscles are of the supremest importance; for in them is held the power of carrying forward the whole machine safely and swiftly. Their duty is laborious. Nor can they shirk it: no other muscles can do their work. A weak fore-arm, therefore, is a sad and fatal defect in a horse of whom any severe work is required. Of these three muscles, the first two must be both strong and long. The stronger these muscles, the greater the endurance of the horse; the longer they are, the greater his length of stride. This is a law, a disregard of which in purchasing or breeding will bring its own penalty.

Of the canon-bone, or leg, this should be said: It should be short, — the shorter the better: for, if it be short, the fore-arm above it is likely to be long; which is a great *desideratum* in speed. In size it should be

small, but of dense and compact substance, smooth and solid as ivory. I do not care how large the fore-arm is, nor how small the canon-bone is, unless it be so small as to amount to maleformation. Active, energetic, and hardy people are apt to have small wrists and ankles. The prize-fighter's arm and leg, when in his prime condition and he stands stripped in the ring, are wonderful for two things, — the apparent smallness of the wrist-bone and ankle-bone near the sockets, and the great mass of swelling muscles packed on above them; and this is regarded as the best conformation for agility and strength. Indeed, large bones are associated with, and found most frequently in, men and women of soft, flabby, and lymphatic constitutions. Especially does this hold true in the case of speed. The Indian runner is never a large-boned man. The deer, giraffe, and greyhound are small of limb. Why do men expect Nature to make an exception to this beautiful law in the case of the horse? On what principle that will bear inspection can this difference be argued? "There are not many," says an Irish writer, "I imagine, who would admire the human leg with the thick end of it next the ground."

But, if the canon-bone must not be of too great a size around it, it should be wide when viewed laterally, and thin when viewed from behind. A flat, compact leg-bone, devoid of flesh, with the tendons standing well out from the bone, terminating at the knee in a large flat joint, — this width at the knee-pan affords plenty of space for the attachment of the necessary ligaments, and also

gives a good opportunity for the sinews to run over it. I do not care so much for the size of the bone as I do for the material of the neighboring parts. The sinews should be large, because a large sinew is always connected with a large muscle. Above all, it is desirable that they should be of such firm texture as to feel to the examining touch like so many distinct and closely-woven cords. If they are swathed in a soft, puffy material, and feel to the hand as if incased in fat, instead of being cordy and wire-like, you may well beware of them. To this may be added, that the sinews should be thrown out from the leg-bone; because if they do not, but are tied down closely to it by the ligaments which bind them to their place, they will be exposed to a dangerous friction and strain. Such a leg is a bad leg to have under any horse.

I would here pause to observe, lest I should be misunderstood, that the reason why the leg of a cart-horse must be larger than the leg of a thorough-bred is not because the thorough-bred's would not answer if the cart-horse had it, but because the cart-horse does *not* have it: by which I mean, that, when you do *not* have fine bone texture, you must have size; for sufficient strength to uphold the horse must, of course, be there in the one form or the other. And, since the leg-bone of the cart-horse is porous and spongy, it must be larger in bulk, in order to supply the needed amount of strength.

The last portion of the fore-leg that I shall mention in detail is the *pastern*. A bad pastern is a great defect.

It should not only be strong, but placed in the proper position, and at the right angle of inclination. In the horse of slow work the pastern should be short, and nearly upright; but, in the horse kept for speed, it should be long and well slanted, in order that it may be sufficiently elastic to relieve the ends of the upright bones of the terrible concussion which would otherwise be given to them whenever the foot, while the horse is in rapid motion, is brought to the ground. A saddle-horse for instance, whose pasterns are short and nearly perpendicular, will feel stiff and uncomfortable to his rider; while the jars and the jolts to which he is exposed by every step he takes will shortly induce disease in the feet, and bones of the leg. But the pasterns must not slope at too great an angle, as those of some animals do; for then the weight of the horse falls so far back of the foot, that the bones do not help uphold the body, and the whole burden of support is put upon those tendons that run over the back-side of the ankle-joint. Such a formation will invariably and speedily lead to the straining and breaking-down of the back tendons. "If the pasterns are too long and too small in the hunter and steeple-chaser, they will not be able to sustain their weight in dropping from their leaps over fences; but if they are tolerably long, very thick, and well slanted, they will have plenty of strength, combined with a sufficient degree of elasticity. An upright pastern, whether long or short, is highly objectionable in a horse for either saddle or harness; and a weak one is, in all cases, unpardonable."

THE FORE-FEET.

I do not propose to anticipate at this point what I shall have to say farther on in that division devoted to the construction of the feet, and the manner in which to shoe them. I will, therefore, now only speak of the outward conformation of the hoof. The foot should neither be large nor small, but of a neat appearance, and medium size. I am no friend to the large, flat foot. I regard this formation as a very undesirable one. It suggests to me that the companion-bones of the skeleton of which it is a part are likewise soft and porous.

It is not the large, flat-footed man that can walk the farthest, or leap the highest; and the spryest and swiftest-footed animals of the world have small, upright, horny hoofs. The chamois, antelope, red deer, and wild horse, all have this formation of the feet. The mule has a hoof that many horsemen would call *contracted;* and yet who ever saw a mule lame in the foot? My idea is, that a medium-sized and neatly-proportioned foot is as good a sign in the horse as in the man. A foot that is either exceedingly large, or quite small, is, to my mind, suggestive of disease in the internal structure of the foot. The great hue and cry about "a wide, open heel," is a humbug. The heels that never look that way are those of a Morgan or French horse, both of which are noted for foot-soundness. I do not remember that I have ever seen an unsound foot under a Canadian horse; and yet the hoof of the Canadian horse is invari-

ably upright, nearly circular, mule-shaped. I commend these suggestions to those who are forever crying "contracted feet" against a horse, unless he has a foot large and flat as an old-fashioned frying-pan.

Touching the shape of the foot, I would say, the hoof should be longer on its ground-surface than broad; and the breadth should be greatest directly across its centre, lessening gradually both toward the heel and toe. Avoid a very high heel, and also a very low one. Either extreme is objectionable.

The outer surface of the foot should be smooth, and of fine texture; free from rings, depressions, or protruberances. Brittle hoofs shun; and select the fine-grained, tough-looking hoof.

The slant of the hoof on its ground-surface deserves close attention. The true and proper angle is about fifty degrees. If less than this, and the hoof is very deep at the heels, it is predisposed to contraction, and likely to become inflamed. If, on the other hand, the reverse is the case, the sole is likely to be too flat, the heels too much exposed; and internal weakness follows. A low heel in connection with a very sloping pastern is to be especially avoided.

The frog should be large, elastic, and healthy in appearance. It should not be allowed to become too dry; nor, on the other hand, to be too spongy and soft. It is probably intended by Nature as a kind of elastic cushion, and should never be tampered with. Let it grow as large as Nature permits; knowing well, that, in

her adaptation of means to an end, the good old dame is wiser than a whole college of surgeons. For further remarks upon the subject of the feet, I refer the reader to the division of this book upon *shoeing.*

We have now examined the structure of the fore-leg in detail; but, before we part with it, let us contemplate the matter, for a moment, as a whole. When examined from the front, the space or distance between the fore-legs should be the same from the breast to the ground. A horse so constructed will rarely be a "speedy cutter" or a "brusher," or go any other way than in a clean, handsome, straight-forward manner. When viewed from the side, the leg should be, as nearly as possible, perpendicular. If it inclines backward very much, too much weight will be thrown in front of it; while, if it be pointed out forward, the weight from above will fall too heavily upon the back tendons, and injuries be the result. I agree perfectly with Carson when he says, "The leg should drop perfectly straight from its junction with the shoulder to the ground; and the point of the toe should come as near as possible to a straight line under the point of the shoulder."

The elbow, the location of which I have already described, should be examined; for it is by no means an insignificant member. The danger is, that it is likely to be pointed too far in or out. If turned in, it will chafe against the saddle-girths and belly-bands, and thus be a source of constant annoyance to the owner. It also compels a vicious knee-action, and to the turning-

out of the toe when the horse is in motion, styled "paddling." The horse with an elbow so placed will also be a "brusher;" that is, he will continually be striking the toe of one foot against the opposite ankle. When, on the other hand, the elbow is turned out, the toe is generally turned *in;* which is a fault of construction far worse than the former one. Such a horse is neither speedy, nor safe to ride. I do not wish to be understood as saying that no horse with his toes *turned in* was ever speedy; for such instances are seen every year on the road or track: but, in these cases, the turning-in of the toes was due to the peculiar way in which the hoof itself was set on, and not to the construction of the elbow. But, when the elbow is turned out, you will never find speed. In support of this opinion many high authorities could be quoted.

As regards the knees, they should never be bent either forward or backward; although some defend a slight backward curve, as a sure sign that the horse can never stumble, because, as they say, "he is so well back on his knees." For myself, if the leg must lose its exact perpendicular position, I should greatly prefer that it should incline forward rather than backward, because, by this backward inclination, the back muscles and sinews of the leg are all interfered with, and positively checked in their action; while it is a fact of my own observation and experience, as it is of others of wider observation and larger experience than myself, that some of the very safest and fastest horses ever known have been

animals rather forward on their legs at the knees. Still the exact perpendicular is the true and desirable direction for the leg.

I feel that I cannot do better, in this connection, than to lay before the reader the opinion of one whose judgment I have already quoted upon another matter. He says, —

"I think any person who takes the trouble of opening his eyes may see that the safety of the horse's knees depends chiefly *on the slant of the shoulder and pastern, together with the method in which the foot is brought into contact with the ground.* On this last point I am at variance with popular opinion, which says that a horse, in order to be safe, requires to be a high-lifter. I look upon high-lifting as a very great fault. Just imagine a man walking down one of the thoroughfares of London or Dublin, and lifting his feet at every step half way to his knee! He would certainly gain a great deal of admiration at the expense of his corns, and perhaps the point of his nose. Now, where is the difference between a man and a horse, which should make such a difference in the mode of their progression? It is the laying-down of the foot which renders the animal safe. Of course, the foot should be raised sufficiently high to prevent the toe from coming into contact with the ground; but this is very different from what is called high action. My objections are intended to apply entirely to those which are denominated high-steppers. I would avoid all such as much as the daisy-

cutter. The medium course is the only safe one. If the horse lifts his foot clear of the road, and lays his heel first to the ground, he cannot fall; as stumbling is usually occasioned by sticking the toe into the road, or striking it against a stone, just as the foot is being brought down into contact with the surface. A horse seldom, if ever, falls in the act of lifting his foot; simply because, in that position, he has no weight depending upon it. He will fall only when he places the toe on the ground before the heel. Under these circumstances, a slight obstacle will bend the pastern forward; and, as the weight of the body is now intended to be thrown on the limb, away he goes. Let the horse with a well-slanted shoulder and pastern throw his foot well forward, and then bring his heel first to the ground, and I will answer for his safety. He will also stand more work than the very high-stepper, whose peculiar action is certain to inflame his feet, as well as to promote the development of a variety of diseases to which the fore-legs are liable. Of course, the observations I have made are applicable to shape and action alone, and have no reference to those cases where a fall is caused by the pressure of a sharp stone on a tender and diseased foot. It must be evident, a case of that sort is very different from one of ordinary tripping. The one is the result of disease; the other, of development or form." — *Carson on the Horse.*

We have now examined the head, neck, chest, shoulders, and fore-legs of a horse, and pointed out the

peculiar formation and characteristics which should distinguish them; and I flatter myself that the reader who has followed me carefully is pretty well informed touching these several parts of the organization. But several others still remain to be examined; which we will now proceed to inspect. The next in order, if not in importance, is the

BACK.

The first thing to observe in judging of a horse, so far as his back is concerned, is the *length* of it. A long back is a weak back, the world over, and in every instance. By superior excellence of structure in other respects, the weakness of the back may be, in some measure, made up; but the horse can never be the horse he would have been had his back been a shorter one. I do not care how short a horse's back is; for it is a sure evidence to me that he can carry or drag a heavy weight a great distance, and not tire: neither, if he be speedy, will two or three seasons of turf experience break him down, as is the case with so many of our speedy, long-backed horses. Old Morrill and Flora Temple are instances in the past; and the famous grandson of Old Morrill, Fearnaught, and Taggart's Abdallah, are good illustrations among horses now living. This conformation of the back is, in my opinion, a grave objection against Young Morrill and Rysdyk's Hambletonian. I yield to both the meed of great excellence. I would speak as warmly in their eulogy as any man with reason could. But, in spite of all their excellences,

I still declare that both of them would have been decidedly better horses had they been coupled shorter and more strongly on the back. If Young Morrill had had the back of his sire, — one of the most marvellous specimens of perfect bone structure and muscular power ever bred, — he would never have gotten so many swayed-backed colts as now stand to his charge. The same is the case, in even greater measure, with Rysdyk's Hambletonian. We know what he has done in the stud. We know, that, crossed on mares of a certain pattern and blood, especially on the daughters of American Star, the son of the great Henry, he has given us trotters of the highest speed, and second to none in endurance. All this I admit, because it is a fact. But all this is true *in spite of his back*, not because of it: and, where he has gotten one colt closely and strongly coupled up in the back and loins (as every colt should be), he has sent forth five or ten without this admirable construction; nay, representatives of the other form. You may attend the fairs of the country, and eight out of every ten of the Hambletonian stallions exhibited will present to the eye this unfortunate peculiarity. In reply it will be urged that these long-backed horses have an "enormous stride." I grant that they do stride a great distance; but I also notice that their *feet stay under the sulky a long time.* The power to "twitch their feet out from under the wagon," as an old driver once expressed it to me, does not belong to them. You never find it in connection with a long back. I

wish to breed colts with an "enormous stride" as earnestly as any one; but I wish that these colts blessed with an "enormous stride" should have the knack also of gathering quickly. A long stride *and a quick recovery* is what I desire to see in the colts bred on my farm. But, in respect to the length of stride, I have this to say, — that it is not in any way the result of the length of back. What we wish is a long stride and a quick gather; and the latter you can never find in connection with a long back, and the former you can find in connection with a short one. It is not the length of the back which gives length of stride, but the position of the pasterns, the slope of the shoulders, and the position of the great bones of the hind-legs. There must be length somewhere, I admit, or else the horse cannot stride far; or, if he attempts it, he will be forever "over-reaching," or "forging" as the phrase goes. But *where* should the length be located? That is the question to be answered; and we say, The length should be located *below*, and not *above*. The length should be put in *between the shoulder-joint and the hams of the horse*. There is where it was put in Flora Temple, and which gave her such a tremendous stride for so small an animal; and there, too, is where you find it in Dexter, Fearnaught, and Taggart's Abdallah, whose stride on a sandy track I have measured, and found to be twenty feet! If that is not an "enormous stride," enough to satisfy any one, I should be pleased to know what is; and yet Abdallah has a short, muscular, Morgan-like

back, as his sire, Farmer's Beauty, and his grandsire, Gifford Morgan, had before him. There never was a falser theory, or one calculated to beget more mischief among breeders, than this, — that we must breed long-backed colts in order to get length of stride. I have always noticed that the horses long in the back, and loosely coupled at the hips, are the horses that always come to the judges' stand padded and swathed with "pads" and "shields" and "protectors" enough to stock a small-sized horse-clothing establishment. The reason is, because there is too little strength in the back and loins to deliver their strokes in a straight line, or to "catch" quickly and handily when they "break." It is at such a time, — the supreme hour of the animal's life, perhaps, — when fame and money hang evenly in the balance, and ten thousand eyes are watching him, and the horse is going at the top of his speed, that formation, and perfection of organic structure, *tell.* At such an hour I desire no long-backed animal to represent me. And in this connection I would observe, that it is surprising that so little attention is paid by breeders and trainers to this matter of strengthening the back. I see no reason why the back of a horse may not, by judicious treatment, be strengthened, as can be done in the case of the man. Dio Lewis will take a weak-backed man, and in two years, yes, in half that time, more than *double* the strength of his back. He will make a man with a weak back by nature have a strong one. If the muscles in the back of a man can be thus enlarged and developed,

why cannot the same be done in the case of a horse, and by the same method; viz., the imposition of weights, gradually increased, day by day, up to the maximum of safety?

Next in importance to the shortness of the back is the width of the bone formation over the kidneys. At this point, viewed from the side, the back should be seen to rise a little, — not too much. I do not fancy a "roach-backed" horse, but with a gentle, easy elevation. Above all, beware of a horse with any considerable *depression* at this point. The ribs should stand straight out from the backbone, and be long, giving great width over the kidneys, and a good chance for the muscles to take hold of the framework. I do not fancy any very considerable *dip* behind the withers. Such a formation of the spinal column and ribs is sure to cramp and interfere with the heart and lungs within the chest, which, above all, is to be avoided: for, without a well-developed and well-located centre to his blood-system, the horse cannot have health; and, without lung-room, he cannot have speed over any but short distances. It is lungs more than any thing else that decide how fast a horse can trot. (See section on *lungs.*)

We now come to the examination of the most essential portion of the horse's frame, — the

HIND-QUARTERS.

Here it is that the strength and speed lie. The fore-legs are for supports: they uphold the body, neck, and

head, — that is all. They add nothing, or next to nothing, to the motive-power. They must be sound, and well sustained with muscles, or they cannot uphold the superincumbent weight, or move themselves with the needed quickness. But with this their function ends. They appropriate their own power. They are, as it were, altogether selfish. Not so with the hind-legs. They are the great motors of the body. They push the entire frame through the air. They set the heavy wagon behind in motion. Watch a horse as he is about to start a load. How does he do it? Where is the power to *push* located? Evidently in his hind quarters and legs. The most casual glance, as the horse lowers himself to his work, will reveal this fact. Watch a horse in the exercise-field; observe him as he rears for the leap, and see him as he goes into the air. How did he leave the ground? What launched him up along that splendid leap? There can be but one answer: *The hind-legs do it all.* Hence the need of power at this point. There cannot be too much; for the effort that he is called upon to make at times is prodigious. It is well authenticated that the celebrated horse Vainhope made a leap thirty-four feet in length. The English hunters will clear a strong, six-barred gate with a hundred and ninety pounds in the saddle. Such feats cannot be done unless the bone structure and muscular development of the hind-quarters are simply perfect. Let us, therefore, examine this supremely important section of the horse's body, in order to ascertain what must

be the position and length of the bones, and the characteristic appearance of those muscles by the use of which a spirited animal is able to perform his mighty deeds. How does a horse look to the eye when the formation of his hind-quarters is as it should be?

Several things must be kept in mind by the student: First, that the bones must be of the proper length, of the right size, and be put together in a right position; and, secondly, that the muscles must be of the right length and size, and have the right direction. The bones, remember, are the levers; while the muscles are the powers by which these levers are moved. We all know that a weight is more easily lifted by a long lever than a short one; that the lever must be large enough to have the required strength, and, above all, placed at the right angle, in order that every ounce of the applied weight may be utilized in the best possible manner. This, in brief, is the philosophy of the whole matter. When the bones are short, and badly placed, the muscles do not act upon them in such a way as to secure the needed power; and the leap attempted is not made, or the wished-for stride obtained. Long bones, well placed, imply great leverage; and long muscles mean that the contracting power by which the levers are moved is great. On these conditions, stride depends; and therefore it is that length of bones and muscles in the hind-quarters of a horse is a thing greatly to be desired. In order to get a true and adequate knowledge of the hind-quarters of a horse, let us inspect the several parts in detail.

THE RUMP,

or haunch, should not be excessively broad: although it is the narrow rump that should be most avoided; for, if the rump is narrow, there will be a decided lack of power. The rump-bones should be well projected on each side of the hips. Nor do I object, when looking for speed, if the projection is so great as to cause the horse to be "ragged-hipped." Such horses, if otherwise well constructed, must, of necessity, be very powerful horses. The bones that reach from the kidneys to the projection of the hip can scarcely be too long, especially in animals kept for speed. Shortness here means shortness of stride. The side-bones of the haunch should droop well down, and not stand out nearly level. I know that some straight or level rumped horses can trot, and trot fast too; but still, as a rule, the horse with a moderately drooping rump is the best. Such a horse, if he is in other respects put together right, is sure to *go*. He will swing along easily. The stifle-joint will be launched out well ahead, and his leg be thrown well forward. This far-reaching-forward motion of stifle and leg will insure length to his stride, and trueness of balance. He will be a *level goer*. His trotting will be done with his legs, and not with his body. Note that this droop of the rump is not inconsistent with roundness of superficial formation: for muscles can be so massed at this point, that the rump shall have a full and plump appearance; and this is the most

perfect of all formations. Such a bone structure, in connection with such muscular development, is perfection itself.

Let us now look at the

THIGH.

This bone extends from the hip-joint to that point where it unites with the upper section of the bone called the *tibia;* the union of the two composing the stifle-joint. As in the case of the *scapula* (shoulder-blade), the thigh-bone is buried in and wrapped about with an enormous mass of muscular substance. This bone is one of the most important of the entire frame. It is connected with those great muscles which alone are able to propel the entire system.

This bone cannot be too long, because the length of it decides the reach of the hind-quarters. If this bone is short, and the bone below it short, the horse may be strong; but he cannot be fast. He will be a short-stepper; and no quickness of motion can make good the absence of a long, sweeping stride. Be sure, then, before you purchase the animal, that these two bones are long, and properly placed. The muscles also, as I have already suggested, play a most important part in connection with these bones. From these alone, remember, comes the power to move them. The degree of their length gauges their contracting force, by which the bones are made to move. Be sure, then, that these muscles are long, large, and hard. Their size can be de-

cided by the fulness of the parts they compose; their length, by the distance which intervenes between the haunch-bone and the thigh-bone, and also by the distance lying between the hip and the hock. This last line cannot be too long. A hock well down towards the ground is a sight that delights the horseman's eye. In respect to the muscles that lie along the thigh-bone, — which I overlooked when speaking of this part, — I would observe, that they should be strong, and well developed inside as well as outside of the thigh. Thinness and flatness of formation here argue decided absence of strength. Indeed, when looking at the thigh from behind, the muscles should absolutely swell out, giving to the otherwise flat surface of the thigh-bone a rounded appearance. This is the very perfection of shape. Such a horse will be a sturdy goer, no matter how heavy the roads. The stifle-joint should extend well forward, and be placed well down. This formation removes the stifle to a proper distance from the pin-bone as well as from the front-side of the haunch-bone, gives greater surface-room for the attachment of muscles, increases their length, and decidedly improves their leverage. The greater the distance between these several parts, the better is the formation in every respect. Look for a large-sized stifle-joint, no matter how broad it is across the front, for here is one of the points of extreme action; and socket-room, as well as room for the muscles, is indispensable. The wider the thigh is from the stifle to the back edge of the thigh, the better. The muscular

formation here should be distinct and prominent. Quantity and length of bone and muscle should be the peculiar characteristic of this section of the body. Never be persuaded, by any perfection of structure as to the rest of the body, that it can make amends for imperfection and lack at this point. The perfect in nature is reached through the perfection of all the parts which go to compose the whole. No one muscle can do the work assigned by Nature to the other. The length of one bone cannot make good the loss of leverage, and therefore of *propelling* power, which results from the shortness of another. You cannot be too severe in your analysis of the horse's frame. Every part of it *must* be perfect; every bone and muscle of the proper length, and properly placed; or else the animal will fail you at the supreme test. He will be a good capable horse up to a certain point; but beyond that, if he is faulty in any part of his organization, no art or contrivance of man can push him. He will always come a little short of that line which your hope had drawn, and which, upon an imperfect examination of him, the average horseman would say he would certainly attain. This great fact should never be forgotten by the breeder when selecting his brood-mares and the horse that is to be the sire of his stables. Faulty parents beget faulty children. This is Nature's great fiat; and it is vain for man to seek to elude it. I know that imperfection of structure can be modified somewhat for the better by judicious crossing; but the instances in which

it is entirely remedied, so far as my experience and observation go, are exceedingly rare. There is nothing *certain* about it. Such breeding is, in spite of every thing one can do, unreliable, and too much the matter of luck. The only *sure* way, as it is the only business-like way, is to have perfection in both parents; and then the great law, that like produces like, will tell in your favor, and *insure* you success. Beware of choosing for the sire of your colts an excessively long-backed horse, or one faulty in the construction of his hind-quarters. Never be led away and enticed by the gloss of his coat, the fineness of his neck and head, the splendid development of his chest and shoulders, into breeding from him, if he is poor in the muscular formation of his quarters. It is in his haunch and thigh that strength and speed lie; and here every thing should be long, broad, and full. If you are a breeder, you can disregard this, and because of cheapness, or facility of service, content yourself with an inferior sire; but I wish you to distinctly understand, in this case, that you are not to blame the principles of breeding for the result of your folly, but your own foolishness in discarding them. With here and there an exception, your colts will be what the parents are, — imperfect animals; which is all you have deserved. You have just what you bred from over again; and this is all that was possible for Nature under the circumstances to give you. The men who cry "that breeding does not pay" are men who make it impossible *to* pay by the substitution of ignorance in

the place of intelligence, and niggardliness in the place of wise liberality, in the selection of their brood-mares and the horse who sires their colts. I never knew any business to pay, especially one demanding so much of intelligence as breeding, when the sole condition of success — the knowledge how to adapt means to an end — was totally lacking.

We will now pass to the consideration of

THE HOCK.

The principal reason, perhaps, why this is worthy of the closest attention, is because it is the seat, for the most part, of all the lameness that occurs in the hind-quarters; and this liability to lameness doubtless springs from the fact, that the strain put upon it by the propelling muscles is so sudden and heavy, that it requires to be remarkably well formed in order to remain sound. To be well formed, the hock, in the first place, must be of large size. No matter how symmetrical it may look to the eye: if it is not *large*, it will never stand severe work. Never be afraid or ashamed of large, coarse-looking hocks. Such hocks are always beautiful to me. Remember that here the great motor sinews are; and sufficient room must be given them to play freely and easily, and without the least friction. Remember, that, the larger the bones are which make up this joint, the wider will be the surface to which the great powerful ligaments which keep these bones in their places can be attached, as likewise the greater will be the surface

over which will be distributed the concussions to which this joint is inevitably exposed when the horse is in rapid action. But size alone is not enough. It should be well proportioned, each and every part of fit and adequate size, so that symmetry, also, shall be attained. The bone that forms the hindermost point of the hock can scarcely be too large; for, the farther it is pushed up, the greater is the leverage capacity of those immense sinews which are inserted into it. This bone should be strong and of great size, as should also be the sinew which runs upward towards the thigh. This should stand well out from the bone, so as to be clearly perceived by the eye, and easily examined by the pressure of the finger. The lower thigh-bone should run into the hock-joint at a pretty sharp angle; but here the angular formation should cease. From this point down to the pastern the leg-bone should be as straight as a perpendicular line; for whatever curve there may be to it, will, as you can understand, cause the back sinews to work at a great disadvantage. Friction with every movement must result; and it is *friction* which begets *inflammation.* Such a horse is ever liable to become curbed. A word about this *curb.* The back sinew which runs down along the edge of the hock-joint is held safely in its place by a ligament specially designed for this purpose, called the *annula* ligament. This spans the joint at the lower end of it like an arch from one side to the other. Of course, if the bones are so placed as to allow the sinew to run in an exact per-

pendicular line, there will be less strain brought to bear upon this annula ligament, which keeps it in its place; and it will be able to bear the strain which the horse with every stride or leap puts upon it. But if any considerable variation from this formation occurs, either by the rounding of the leg-bone at this point or the turning-in of the hocks towards each other, there will be a corresponding friction and strain brought to bear upon the annular ligament. The sinew will be liable to start out completely from its natural position, the beautiful arrangement of Nature at this point disrupted, and an unseemly tumor be the result. This *tumor* is the *curb.* Once formed, the joint is forever impaired. The sinew, you see, is actually torn out of its place; the band that should have held it in its natural position is unduly strained or parted; and perpetual weakness is the result. In purchasing, beware of a curb. Any protuberance, however slight, at this point, should be regarded with grave suspicion; and the money which you were to give for the horse, keep in your pocket. In addition to the curb, another evidence of unsoundness is to be looked for at this locality. I refer to the *spavin.* The bones of the hock are the natural seat of this disorder or infliction. Protection from this terrible evil lies in the size and symmetry of the hock-bones. Coarse-looking and strong joints are not likely to get out of order; but your smooth, neat, dandy-looking joints rarely, if ever, stand any considerable amount of work. I do not think that spavin, in

as many cases as some imagine, springs so much from the imperfect formation of the hock as from *scrofulous* tendencies in the animal, which render him constitutionally exposed to joint and bone disease; and so it happens that no size and symmetry of the hock can ever be regarded as an infallible protection from the spavin. Another cause of spavin, and perhaps the greatest, especially in America, is injudicious shoeing. If a horse, for instance, brushes, the smith will say, "Oh, I can cure him of that!" and so indeed he can, and without the employment of any marvellous amount of wisdom either. All that he needs to do is to cause the shoe to be thicker on one side of the heel than the other, and the horse will not brush; but this construction of the shoe, it should be remembered, causes so much more weight to be thrown upon one part of the hock-joint than another, that disease is pretty sure to be the result. "I wish," says an intelligent writer, "that these smiths had the one side of their boot raised an inch higher than the other in order that they might enjoy the same pleasure that they have conferred upon the horse. They would then, especially if compelled to run and jump, have an opportunity of knowing how long their ankle and knee joints would continue sound." The last cause of spavin I shall mention, and perhaps the most frequent, is the smallness of the shank-bone at its junction with the hock. The hock has not sufficient surface to rest upon. The force of the concussion to which it is exposed is not sufficiently distributed; and spavin is the

result. I have seen horses so badly constructed in this respect, that, in looking at them from a side-view, the front of the shank-bone immediately below the hock-joint looked as if it had been shaved away. I need not say that this is a fearful defect; for the bone at this point, in order to receive and carry the joint properly, should be wide and thick. A broad, firm basis for what is above to rest upon is one of the best possible assurances that the owner can have that his horse will never be spavined. In further description of the shank-bone, I would remark that it should be short, stout, and flat: a long, round formation is as bad a one as perverted nature can form. "Wide as a slab" was the description which an old stage-driver in Vermont once gave me of his ideal shank-bone; and a very good description it was too. In a well-formed leg the back sinews should be brought well out from the bone, and feel to the finger like finely-twisted cords. See to it that they are free from all irregularities of surface, such as puffs, notches, and globules of fatty substance. Let them, rather, be smooth and hard as scraped bone. Observe, also, that the lower end of the shank-bone, as well as the upper, should be of sufficient size to make a strong and solid connection with the pastern, which should be longer, stronger, and more oblique, than the pastern of the fore-leg. In short, see to it, that, from the line of the rump to the ground-surface of the hind-foot, bone and muscle alike look as if they were of such size and strength, and so admirably adjusted in

their proper positions, that they can do and endure all things. A horse with such an appearance in the hind-quarters, if otherwise well formed and of right temperament, will never fail you, but will remain, until old age diminishes the natural forces of his well-constructed organism, the pride and ornament of your stable.

I have now gone over the several parts of the horse, upon the character of which his structure, and hence his usefulness, depends. I have striven to avoid the employment of such terms as would be difficult for the average reader to understand. If I have succeeded to that extent to which I aspired, the reader who has carefully followed me in my remarks has such knowledge of the organs, bones, muscles, and general shape and appearance, of the horse, as to qualify him to select with wise discrimination the animal or animals which he needs for either general or specific service, or for the purposes of breeding. He cannot hereafter be deceived by the cunning of dishonorable men, or have any but himself to blame, if he invest his money unwisely in his future purchases. But I ask him to observe, that all *data* for man's information are worthless, unless, when attained, they are used in connection with his own observation and intelligence.

It is by the use of your own eyes and fingers, my reader, in connection with the knowledge I have now put in your possession, that you can become wise in horse-craft. Suffer, at this point, two or three cautions. The first is, *Buy on your own judgment*, and not on that

of another man. I would speak with all modesty; and yet I would say, that it is my firm belief, that if you have closely perused the preceding pages, and thoughtfully pondered them until the main suggestions I have made are well fixed in your memory, you are better prepared to go forth and purchase horses discreetly and profitably than nine out of ten of those professional horsemen as they are called. Exercise your own judgment, then, getting greater wisdom by your mistakes; which, I warrant you, under the conditions supposed, will not be many nor grave. But, if you are to thus trust wholly to yourself (which I decidedly advise), be deliberate and thorough in your examination of the animal under inspection. Note every point in order as I have followed in this work. Let eye and finger alike contribute to your decision. *Feel* of the bones, muscles, and sinews. It would be difficult to cheat you, even were your eyes bandaged, if you would receive the knowledge of the animal's shape and condition which might come to you through your hands alone.

Be sure that the horse you purchase has symmetry; viz., is *well proportioned* throughout. Never purchase a horse because he has a splendid development of one part of his organization, if he be lacking in any other. Above all, keep well in mind what you are buying *for*, and buy the horse best adapted to the work you will require of him; and, when such an animal is yours, be content. Never jockey. An occasional exchange may be allowable; but this daily "swapping" of horses

advertises a man's incompetency for any thing higher. Another caution is this: Never purchase a horse until you have seen him move, and under the same conditions to which he will be exposed in the service you will expect of him. If for a draught, see him draw, back, and turn round in both directions; if for the road, see how he handles himself, not merely on level ground, but on going up sharp declivities, and, above all, in descending them. In this way you will ascertain the faults or excellences of both his temper and structure.

In these exercises drive him *yourself.* The reins in a skilful hand, aided by the whip or mouth, can be made to conceal grave defects. Let him move with a loose rein, so that he may take his *natural* gait, and not his *artificial;* for, by so doing, you will detect any mistakes of judgment that you may have made when looking him over in a state of inactivity. Many a time unsoundness will appear in *motion*, which no inspection of the eye and finger, however close, can ascertain. When you have walked him and jogged him, if he is to serve any other than mere draught-purposes, put him to his speed, and keep him at it for a sufficient distance to test his breathing capacity: then pull him up; jump from the wagon, and look at his flanks; inspect his nostrils; and put your ear close to the side of his chest, in order to ascertain if the action of the heart is normal. If this exercise has caused him to perspire freely, all the better; for you can then see, when you

have returned to the stable, whether he "dries off quickly," which a horse of sound constitution does when in perfect health. Watch him also carefully when he is being taken from the stall, and while the harness is being put upon him: you will in this way ascertain his temper, and detect any thing that may be undesirable about him.

Above all, in dealing, deal, as far as possible, only with honorable men. Act so as to live above the hint or suspicion of dishonesty yourself. No gentleman will have anything to do with a mere jockey; and the worst reputation that a breeder can get is one for cunning and trickery. Such a breeder will find it hard work to sell his colts. Everybody suspects him. He may have a fine young horse; but his evil reputation makes men shun him, because they fear they shall get cheated if they buy of him. In no business does honesty pay more surely, or larger dividends, than in the horse-business; and the reason is, because gentlemen who pay liberally for young horses are very often distrustful of their own ability to judge as to the merits of a horse, and so, naturally, desire to purchase of men whose word they can depend upon. No breeder or horse-dealer in regular business can afford to cheat, even if he has no conscience to restrain him from so doing. Raise good colts, and keep a good character, and you will make money by breeding.

I cannot resist the inclination to put on record in this place and manner my strong protest against the

conduct of certain people, who, by slurs and innuendoes and misrepresentations, seek to bring into popular disgrace the most delightful and elevating branch of American agriculture,— the breeding and training of fine horses. Such behavior is both disgraceful to themselves, and, so far as it has any influence upon the public, hurtful to the best interests of the country. As a branch of business, it represents an enormous amount of capital, as the national statistics show, —of capital, too, contributing actively, year by year, to the commercial prosperity of the land, and also largely and directly to the health and happiness of its inhabitants. From the settlement of the country, the horse has been intimately and honorably associated with our social and religious life, as he has also most potentially contributed to the development of its trade and commerce. Without the assistance of the noble animal these thoughtless people persist in associating with gamblers and jockeys, our religious congregations could never have been assembled sabbath by sabbath in the churches, nor our political gatherings held, nor, as we all realize in view of the revelation of the last winter, during the epizoötic season, could our business enterprises have been carried out. Why an animal so noble by nature, and useful to us all, should be singled out for reprobation, or to engage in his propagation and training be stigmatized as a low and vulgar pursuit, passes my comprehension. For one, I acknowledge a debt of gratitude to those, who by importation of blooded animals, or careful attention

to the principles of breeding, have contributed to the improvement of the American horse. The world is happier and better conditioned to-day because Lafosse, Rarey, Hiram Woodruff, and men of their intelligence and character, lived. And not alone to these great masters, who revealed to us the true method of shoeing, training, and driving horses, are we indebted, but to all of lesser note who in any sensible measure assisted in the improvement of the animal himself, or of man's knowledge of his wants, and his capacity to serve the human race. If it be a disgrace to teach men useful knowledge; to add to the intelligence and humane impulse of the country in respect to the humblest of God's creatures; to show those of small fortunes how to increase their limited means, and hence to improve their own condition, and swell the aggregate prosperity of the country; to fire with a worthy ambition the young agriculturist to produce better stock than his father bred before him, — if this, I say, be a disgrace, then I rejoice to share it with those, who, in every State of the Union, are laboring to accomplish the same noble end, — men whose public spirit I admire, and the integrity of whose characters I hope to equal, but may never expect to excel. I love, with an attachment which increases with the passage of years, my native soil; and hold that its cultivation, and employment in those pursuits connected with it, is most conducive to the practice of those virtues which ennoble man, and minister to his happiness. I love the earnest, honorable

industries of the field, and the stimulating companionship of the spirited denizens of the stable. The strong, healthy odor of the earth, the scented hedges, the tremulous happiness of harvest-heads, the welcoming neigh of glossy favorites greeting my coming steps with the pride of their arched necks and expectant eyes, — all this is a delight. Hail to this life of innocent and humane sovereignty, in which care sets with the setting of the sun, and gentle night brings gentler repose! I cherish the ambition, that, in some limited measure, I may contribute something to the intelligence of those of my generation who share this feeling with me, by which they shall more perfectly understand the principles that underlie success in those pursuits, which, while they minister to the truest pleasures of life, supply, at the same time, the needed support and profit. Enough for me, if, when that crowded life which lives in cities, and to which I am now a teacher, shall have forgotten me, — as it surely will forget, — I may still be remembered in the scattered hamlets of the country, and be occasionally mentioned by the farmer's fireside, as having been a friend of the farmer, and of the farmer's best friend, — the gentle, serviceable animal, — the horse.

CHAPTER II.

THE PRINCIPLES OF BREEDING. — REASONS WHY BREEDERS HAVE NOT BEEN FINANCIALLY SUCCESSFUL.

No one who is at all acquainted with the history of breeding in New England and the country at large — at least, so far as trotting-horses are concerned — can deny that much money has been lost, and many failures made, by those who have embarked their property in the enterprise.

The fast horses of the country seem to be rather the result of accident or good fortune than of design. In other business, men invest one or five thousand dollars with the reasonable certainty that they will receive their money back again, together with a profitable rate of interest. This is what is called doing a *safe* business; and it is this certainty of return that renders the business legitimate. By as much as the result is uncertain, accidental, the business loses in dignity, ceases to be attractive to a well-constructed intellect, and becomes a species of gambling. Now, breeding of fast horses has been a business, up to within a few years, and

even now, in the majority of cases, is a pursuit, notoriously tainted with this fatal element of uncertainty. The history of almost every breeder is a history of extravagant hopes and bitter disappointments. His whole career has been one of struggle, delusive successes, and total failures. If now and then he has made a "hit" as the saying is, if occasionally he has produced a fast colt, the very success served only, in the way of contrast, to make his failures all the more noticeable. The great trotting-horses of the country have not been foaled, in the proportion that one might reasonably expect, in the great stables of the country: they have come, rather, before the public from obscure sources. In many cases, as with Dutchman and Flora Temple and Ripton, no one can tell up to this day any thing of the sire or the dam. The fact that three such horses, and scores of others of almost equal merit, have no known parentage, reveals how rude and unsuccessful the breeding efforts of the country have been. Who can conceive of three winners of the Derby with no known pedigree? Who can imagine a horse arising in England, who should win all the principal prizes, and remain king of the English turf for six or ten years, and no Englishman be able to tell the stable in which he was born, the dam that foaled him, or the horse which was his sire? Such a thing would be impossible: for there the principles of breeding are understood; the result that shall come from the union of two strains of blood can be predicted; and successes

are in the line of sequence, and not of accident. But here we have had few, if any, impartial and intelligent students of the problem. The most intricate and delicate of all endeavors to propagate great excellences by the harmonious union of desirable qualities, possessed in part by the sire and in part by the dam, has been, for the most part, undertaken by men too ignorant or prejudiced to grasp comprehensively the rudimental principles of success. Hence it is that breeding in America has been an innocent kind of gambling; that is, a venture in which good luck, rather than an understanding of and attention to the business, was relied on for success. Hence many of our fastest horses are sent to us annually from the barn-yards of unknown, and, so far as principles of breeding go, ignorant farmers. We find them — as Dutchman was found, in a tandem-team, drawing bricks; or behind a drover's wagon, as Flora Temple was discovered — without name or fame. They come unheralded by any expectation, the result of no plan, no knowledge, no wisely-invested capital. This seems an indisputable proposition, therefore, — that one of the causes of the financial failures which have attended attempts at breeding is to be found in the gross ignorance of the breeders themselves in the principles of propagation. This is the more to be wondered at, because, in all kindred branches, knowledge is universally admitted to be the great essential of success. No one, for instance, will invest money in trout-culture until he has examined into the principles which under-

lie their propagation. He becomes a student of trout; studies their structure and habits, their favorite diet, and the treatment which is most favorable to their rapid increase and growth. All this is preliminary to the grand undertaking. He invests no money, he makes not a move, until the knowledge of the business necessary to the proper understanding of it is obtained. So is it in the case of fowl, sheep, and the like. Knowledge first, investment of money next, is the rule and order. It is just this rule and order that men seem to reverse in their attempts at breeding the horse. With no knowledge of what is needed in the sire or the dam; with no power to discriminate the qualities of either; with no ability to say that these qualities are such as to warrant harmonious union of all that is most desirable in either parent, — in the foal, or the reverse, — they breed, not along the line of certain well-ascertained principles or clearly-discerned similitudes, but haphazardly, as chance furnishes the opportunity, trusting to luck to produce a fast colt.

The grossness of this blunder can only be apprehended and realized when you consider that the breeding of fast horses is not only a business, but a business the principles of success in which are most delicate and hidden. The man who engages in it not only undertakes to deal with the outward and material, but more yet with the inward and the spiritual. The problem is the propagation of a high order of life; and not only its propagation, but its propagation in such a

form and spirit, that its expression shall be marked with certain specific characteristics.

The breeder must be, in the most thorough and elevated sense of the word, a student. His capital is his power to observe and infer. From what is seen, he reasons to what is unseen; from that which is, to that which shall be. His study is the study of nervous forces, — their origin, and law of descent; of muscular power, — its source, how accumulated, and how sustained. Nor is this all. He is a student of an organization of so high and fine a quality, that its condition, and states of temperament, are as variable as the wind. The horse is an animal of exquisite construction. In him we behold one of the finest results of creative skill. In nervous structure he is exceedingly sensitive. Sensitive and sympathetic, he suffers from those changes in condition and treatment to which other animals are indifferent. Even so slight causes as changes in his food and bedding, interruption and difference in grooming, ay, even the subtle changes of the atmosphere, affect him. Nor is it alone the horse before him that he must study. To know a man, you must know something of his ancestry. Man is not a simple, he is a complex, being. He is the result of many antedating causes. He is the embodiment of both harmonious and antagonistic forces. Five generations are represented in him. He is the child of ten parents; and each parent positively or negatively exists in him. So it is with the horse. He is the result of antedating causes. Sire, grandsire, and a long line

of ancestry, — with all their peculiarities of spirit and structure, of like and unlike qualities, of elements harmonious and antagonistic, — are represented in him. To study him is to study them. To know him is to know them. You must gauge the force that is not before you can gauge the force that is. History must assist observation, and reading be joined to sight.

Is it extravagant, then, for me to ask, What higher study can there be than this, — this study into life muscular and nervous, mental and emotional? What nobler subject than this, — the investigation of those laws by which life, in all its changes and gradations, is transmitted from sire to son? What more difficult problem than this, the solution of which should reveal to us the forceful properties which repeat themselves in animal as well as human life, and which may, therefore, be regarded as truly representative of that order of existence with which we behold them associated? And yet men have expected, without knowledge or study, or facilities whereby to conduct the business advantageously, to make great fortunes out of breeding; and people can be found all over New England and the country who will question the profitableness of breeding fine horses, on the ground that many of those who have attempted it have not been successful; failing to see, or else purposely ignoring the fact, that the reason why these gentlemen have failed to achieve success in their efforts is because their efforts were not directed by a sufficient intelligence in respect to the business they had undertaken.

Now, the writer firmly believes that breeding of handsome and fast trotting-horses in America is, and will continue to be, a most profitable business. He believes it will yield for the money invested a larger return by twenty per cent than any other branch of agriculture; and he believes that this is especially true in the New-England States. The fact is, agriculture proper — by which I mean the tillage of the soil, and the production of those products that grow directly out of the soil — can no longer be relied upon to keep alive the agricultural spirit, or sustain the agricultural wealth, of New England. We cannot compete successfully with the Middle States and the Great West in the raising of cereals, or, indeed, in the breeding of those animals whose market value can never rise beyond a certain moderate price, and to fit which for the market the products of their great wheat and corn fields are serviceable. Hence it comes about, that in swine and beeves, and the lower-price horses, New England can never compete with Ohio and Illinois, Wisconsin and Texas. When horses of good serviceable quality for family and team use can be shipped from Michigan to Boston, and sold in our sale stables at a hundred and seventy-five dollars per head, no Massachusetts breeder can afford to raise colts of ordinary quality. So long as the cost of transporting a horse from the West to the seaboard is less than the difference of the cost of supporting him from the time he is foaled to the time he is ready for the market, New England cannot afford

to breed low-priced animals. It is, therefore, only in raising such animals as are of fine quality that we of the Eastern States can find our reward. Here it is that we see another reason why breeders have been unsuccessful in their investments. They have bred on the level of too low an average to make it pay. The principle on which they acted, that low-priced stallions and dams could produce high-priced colts, is a false one.

I wish the reader to observe, then, that, while I maintain that breeding can be made in New England to yield a liberal return for the money invested, it cannot be made to do this save when it is conducted with knowledge and understanding of those principles which insure success. In brief, it is like any other business: it can be conducted successfully only by those who understand it.

The first thing, in order to do any thing, is to learn *how* to do it.

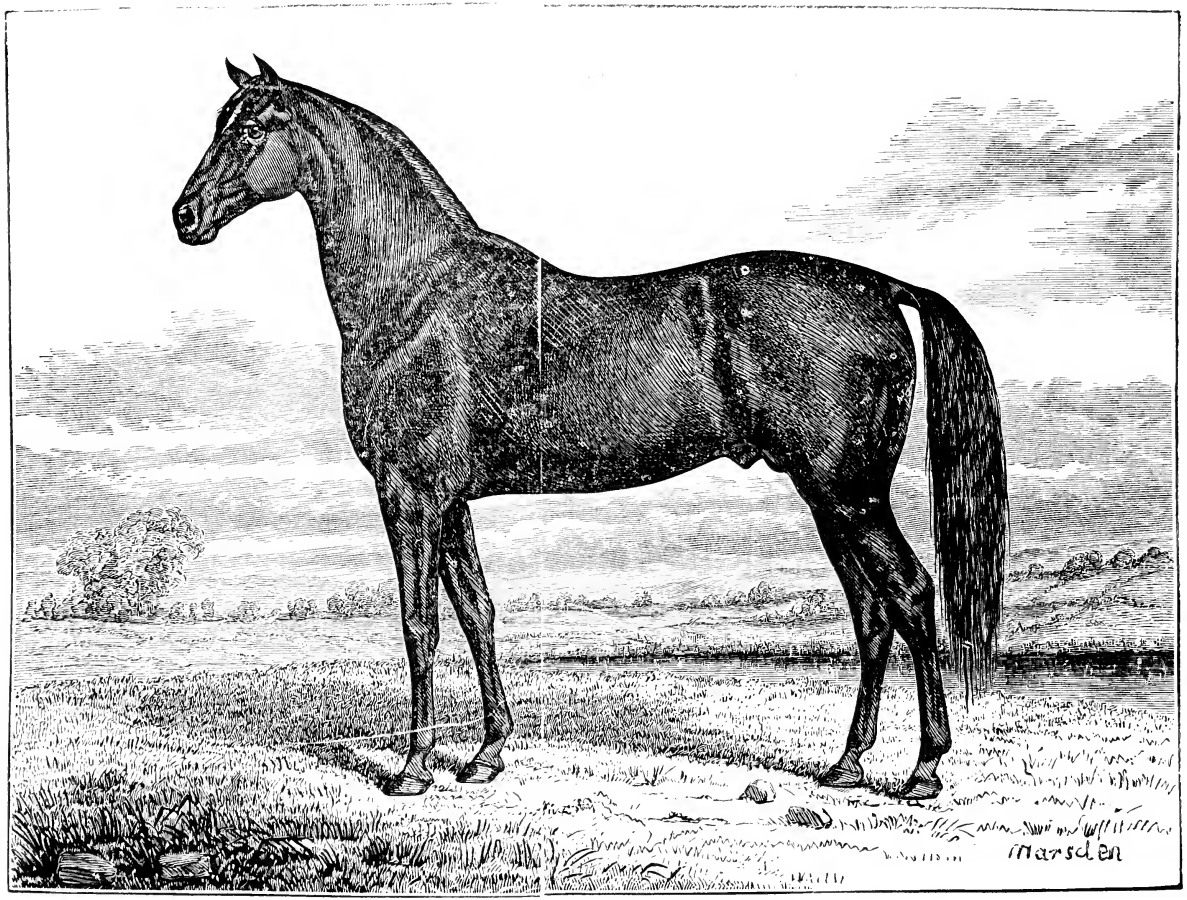
CHAPTER III.

BREEDING. — HOW TO SUCCEED.

In the preceding chapter we discussed the subject of breeding from a philosophical standpoint. We called the reader's attention to the fact that the successful breeding of any class of animals demands, on the part of the one who attempts it, a most thorough knowledge of the structure, temperament, and habits of those animals whose species he would propagate. We reminded him that the horse belongs to an order of animals of high organization, both nervous and muscular, — so high as to be easily marked by those from which he descended; and that, in order to breed fine horses successfully, he must become a student of one of the most intricate and difficult problems in natural history.

We now propose to point out some of the more palpable means of success in detail.

At the risk of reiteration, we would say to every young man in New England who is proposing in his own mind to raise a certain number of colts, Put yourself in the way of learning something of the business



CARENAUGHT.—OWNED BY WRIGHT AND NORCROSS, MANCHESTER, MAINE.

upon which you are to enter. To your own observation add the observation of other men. Re-enforce your own knowledge with the wisdom of those who have grown gray in the business. Above all, become a student of the horse. Obtain such books as you need to inform your mind of the history, habits, and peculiarities of the animal you admire. Make yourself familiar with the history of the noted horses of your own country, and also of other lands. Make yourself acquainted also with their shape, size, peculiarity of going, character of their temperament, and the ancestry from which they sprang. Study pedigrees, that you may know by the union of what bloods, and the intermarriage of what families, great results have been obtained. Study the horse, not only with the *eye*, but with the *hand* and *finger*. Make yourself familiar with every joint and bone and tendon. Know the horse in his skeleton, until you know the place of every bone, muscle, and member of his frame. No one ever knows a horse by merely looking *at* him: he must look *through* him as well. Learn to distinguish the weak points and *good points* of a horse at sight as an artist distinguishes a mere daub from a finished picture at a glance. If you intend to make breeding a business, it is a good plan to engage yourself to some practical breeder, and remain with him until you have mastered the *minutiæ* of the business, and become familiar with the hundred and one points of interest that can be learned only by actual service on a brood-farm. The reader will see, that, while I demand

no more than is universally admitted to be the condition of success in other branches of business, I do demand this; and I lay it down as a law, which executes its own penalty when transgressed, that he who breeds a horse while ignorant of the correct principles of breeding will breed a failure. If he ever make a success, it will be based on no broader and surer foundation than mere luck.

The second point, in the way of suggestion, that I make, is this: Whoever wishes to raise a fine colt must be willing to put himself to a certain amount of trouble and expense. There is an old saying, "that the gods never drop nuts already cracked into men's mouths;" and it is the law which runs through the world, and puts its equal pressure upon all, that the effort put forth shall exactly gauge the degree of success.

Now, the country is full of men who are ambitious to raise a five-hundred-dollar colt, but who are at the same time unwilling to be at any considerable trouble or expense to do it. They wish the five-hundred-dollar colt; but they wish to get it in such a way, that it shall not cost them over fifty or seventy-five dollars: in other words, they desire some three or four hundred per cent return for the money invested. It is needless for me to say that such an expectation is futile. In the very nature of things, it can never be realized. The law of cause and effect is against it. It is not difficult for an intelligent breeder to raise a five-hundred-dollar colt; it is not extravagant for such a person to expect to raise a

colt, which, at five years of age, shall command a thousand dollars for every year of his age: but it costs time, attention, and considerable money, to insure such a result. An ordinary dam will not produce such a colt. An ordinary stallion will not beget such an animal. To raise a handsome and fast-moving colt, you must have handsome and fast-moving parents to bring him forth, and favorable conditions of birth and culture such as money and intelligence can alone provide. Like produces like; and a fine-blooded colt must have fine-blooded parentage. This is a law; and no one can escape its application. Stallions whose service can be obtained for ten or twenty dollars, and mares of low blood and negative characters, can never beget or conceive such a foal. If you are willing to pay for a mare, and for the service of a stallion, of the needed character, and then are willing to bestow upon the dam, before and after the foal is cast, the proper management, your expectation can be realized; otherwise not. Luck has nothing to do with breeding. Knowledge, and a wise use of means, can alone secure you what you desire. You can ignore this rule, and fail; you can comply with it, and succeed. The election rests with yourself.

I will now proceed to suggest certain facts, and items of information, of a character to assist the breeder in his enterprise. I say, *suggest;* for no statement which I may make is supposed to be able to take the place of thought on the part of the breeder. You must use your own mind, reader, say what I or any one may. My

object, then, is to help you think, to stimulate you to thoughtfulness, to make you a student of the question yourself, rather than impose upon you certain deductions I may have made, and insist upon your accepting them as the ultimate truth. Indeed, there is much of mystery hanging around this matter of procreation. What is this power which shapes things yet to be? What *is* it that dictates structure, temperament, destiny, causing the initial germ to be prophetic of the perfected result? It is difficult to answer. I know of no one who has answered these questions; nor do I expect to solve the problem: I only make my contribution toward the fuller discussion of the subject. I simply propose to lay before the reader the conclusions which my mind, in examination of the subject, has already reached, with the reasons therefor.

In addition to knowledge, certain means and facilities are needed in order to make breeding a success. Some money, and more care, must be spent in the enterprise. The stall in which the brood-mare is kept should be dry and roomy. A damp stall, where the mare stands and sleeps on a manure-heap pervaded with the odor of ammonia and decaying substances, is totally unfit, as any sensible man can see, for an animal so sensitively organized, and in such a delicate condition. The brood-mare should have a good-sized stall in which to stand during her pregnancy, and be well and warmly bedded, and in every way well treated. Not only humane impulse, but pure selfishness, prompts the owner to this. In a narrow

stall, ill kept, the mare is liable to get "cast," and, in her struggles, so displace the foal from its natural position, that, when the time of foaling comes, the colt can be delivered only with the greatest effort and pain, if indeed it can be at all. Many brood-mares are annually lost from this cause alone. The worst accident that can happen to a brood-mare when in foal is this getting "cast" in her stall. It should be most carefully guarded against. Especially *tie with a short halter.* The man who "ties long," as grooms say, warn once; and, if he does not heed your warning, *discharge.* Have no mercy on him: such carelessness is too gross and fearful in its consequences, often, to be tolerated in the management of valuable horses. I came near losing one of my finest brood-mares, a thorough-bred from the South, from this vicious method of tying in the stall. The groom left the halter so long, that, when she started to get up, she reached one of her fore-legs over the rope; and there she was! In her struggles, the rope cut into the fore-arm, tearing the hide and flesh away from the muscles, and causing a most ugly wound. Good treatment and a sound constitution in a state of entire healthfulness brought her out of the peril in safety; but that groom never "*ties long*" now!

Near the time of foaling, — say two or three weeks previous, — the dam should be put into a "breeding-box" or "foaling-stall." This should be some twelve by twenty feet in size, well strewn with tan-bark, saw-dust (dry), gravel, or sand; indeed, with any thing that will

make a soft, warm bottom. Over this the straw-bedding should be strewn a foot deep at least. If the mare is inclined to eat her bedding, put a muzzle on her (an ordinary wire or splint ox-basket will answer); for it is not wise to have the mare fill her stomach with coarse feed at this time. The floor should be level, and "banked up" a little round the sides and in the corners, lest in rolling, or perhaps in the act of foaling itself, the mare should get over upon her back, or doubled up in a corner in such a way as to embarrass her. Too much care cannot be exercised by the breeder at this juncture; for it is the time when every thing may be lost by inattention and neglect. And I put it down among the *necessities* of a breeder's outfit, that he construct a good *foaling-box* for the mare, and attend to the matter essentially as I have suggested. Such a box is not necessarily expensive. I have seen those that cost five hundred dollars, and others that did not exceed fifteen; and, for all practical purposes, the one was as good as the other. The conditions I suggest are not those essential for ornament, but for safety.

Another matter of prime importance to a breeder is this: How far is he from a good stock-horse? Transportation costs: it is also perilous. When the writer began to breed, he was compelled to transport his brood-mares two hundred miles to be covered. He has seen half his stable of choice animals go rushing along through the darkness and fog in a miserable old freight-car, at the rate of thirty miles an hour; and the sensation he

experienced was not an agreeable one. A man dislikes to see his property treated in that way, especially if it is property selected with care and at large expense, and of a character not easily to be duplicated. The expense, also, is considerable, and eats into the profits disastrously. I presume my first three colts cost me, when weaned, four hundred dollars each. Even at that price, it paid; but it lessened the per cent of profit decidedly. Among the conditions of success in breeding, therefore, I place this as a prime one, — local nearness, and easy access to a desirable stock-horse. The cost of his service is of less account, because this is generally settled by the reputation of himself and his get; and so the breeder shares in the profit of his fame with the owner. But the distance of his stable from yours, which includes transportation, with its attendant cost and risks; the interruption it brings to your business, &c., — these must be carefully considered by the breeder, or he will find that his profit is gone before the colt is foaled. A distance that he can drive in two days is of no great moment; but farther than this I should advise no breeder who is breeding on business-principles, for financial profit, to go. To attempt to breed from a stock-horse at a great distance from your stables, is, so far as my experience and observation go, unwise, and likely to result in loss.

Above all, it is folly to breed inferior stock. Nothing is to be made from it, as mountains of testimony prove. "The best or none" should be the motto of the Eastern breeder.

There are other conditions of success to be enumerated; but, as they relate more to the knowledge derived from the study of the horse himself than in the surroundings and appointments of the establishment, they more naturally fall into another division of this work; to which we now invite the reader's attention. Let us now consider the principles that underlie successful propagation of the horse, and the elements needed in either parent.

CHAPTER IV.

THE SIRE.

THERE are certain general views touching the influence of the sire on his stock, which every one who is intending to breed should be aware of. There are certain cautions which it behooves every writer, who attempts to give people instruction in the business of breeding, to give frankly to his readers. I propose, therefore, in this division of the work, to enter into a full discussion of the matter, and give my ideas at length concerning the influence of the sire on his stock. Indeed, as I have already sketched the outlines of a perfect horse, and described the different points and characteristics which must distinguish such an animal, I now propose to sketch a perfect *stock*-horse, and thereby supply my readers with a standard in breeding, as I have already done in purchasing. In short, having described a perfect horse, I will now describe the way in which he can be propagated.

The first, and to my mind the most essential fact to be borne in mind by a breeder is, that the propagating

principle or capacity does not inhere in all stallions alike. It does not follow that a stallion, however perfect he may be both in conformation and temperament, will make a good stock-horse, or prove a source of profit to those who patronize him. It is at this point that so many blunders are made, and from which so many failures result. At this point two roads diverge, one of which leads to success, the other to certain disaster. How essential, then, that a warning and directing hand should be set up at this point, seeing which no breeder can be uncertain which path to take! The fact is this, that in addition to temperament and perfection of structure, over and above desirableness of nervous and muscular organization, there does exist in certain horses the power to propagate their most perfect points and characteristics, which other horses, equally perfect in themselves, perhaps do not have. What this power is, or *where* it is, or how the horse *comes* by it, no one can tell. It cannot be *implied:* nothing short of an actual demonstration can prove that it exists. It is *this* which makes a stallion worthy to be kept as a stock-horse; *and nothing else can.* No matter how beautiful, nor how sound, nor how speedy, nor how well connected in pedigree, a colt may be: he should never be advertised to the breeding public, until, by actual service with his own brood-mares, his owner is made aware of his capacity to reproduce his own excellences in his get. I maintain that any other course includes a fraud upon the

public, in that he advertises as certain what he knows, or should know, is *extremely* uncertain; for this *reproducing* capacity is withheld by some strange freak or unascertained reason of nature from most horses, and bestowed only upon the few. Out of a hundred stallions in a State, only two or three ever become justly famous. The strangest and most unaccountable thing of the whole matter is, that many horses for which the best judges would surely predict success, prove, upon trial, lamentable failures; while others less esteemed become heads of families, and live with increasing honor with the birth of every generation of their descendants. It is not from the winners of the St. Leger and the Derby that England has received her fastest stock. These winners, in cases numberless, were out of the loins of horses by no means noted, but which gave to their sons and daughters that which made both parent and children immortal. Instances too numerous to mention might be quoted; but the principle is too fully admitted to require argument and illustration. The fact stands admitted, that, until a stallion has been actually tested in the stud, it is useless to predict whether he will be valuable as a stock-horse or not, and folly for the general public to breed to him.

Among the horses which excel in this peculiarity, at the very head of the list may perhaps be placed old Justin Morgan. The reproducing capacity of this horse, considering the treatment he received, was simply marvellous. Unappreciated and abused half of

his life, it was the merest accident that his value as a stock-horse was discovered at all; and even then he was bred indiscriminately to mares, unassisted by the least intelligence in the matter. Still, in spite of all obstacles which neglect and ignorance opposed, the reproductive faculty was so superlatively strong in him, that he founded a family truer to the original type, and more able to protect itself from the infringements of foreign blood, than any family of horses, perhaps, that the world has ever seen. Whatever men may say for or against the Morgan horse *per se*, none can deny that his blood was strong enough to dominate over every blood with which it was brought in contact. No matter to what mare he was bred, the offspring was invariably a Morgan colt. In outward conformation of structure, in color, in temperament, in style of action, and even habits of the stable, the foal grew up to look and act like the sire. Not only was this reproductive faculty strong in the old horse, but he *transmitted it to his sons;* which is the highest form of all excellence in a stock-horse. Nor did this power die out in one or two generations, but continued on like a stream having a constant source; and might have been prolonged, doubtless, unto this day, had not the State which had been enriched and made famous by this animal and his descendants committed financial suicide by allowing the family to be scattered, and the family type itself bought away from it. Not alone Vermont, but the entire country were losers when the Morgan family ceased

to have "a local habitation," although it could never cease to have "a name." In proof of the perpetuation and continuity of this reproductive faculty in the Morgan family, even in our time, might be mentioned Ethan Allen, sired by Black Hawk; and Taggart's Abdallah, whose grandsire was the famous Gifford Morgan, — perhaps the most beautiful horse ever ridden at a military parade. Of the speed of these two famous stallions — the former of which has trotted a mile faster than any horse that has ever lived, and the latter of which is, in our opinion, the highest type of a stock-horse in the country — we shall speak more fully hereafter. Enough at this point to say that they are lineal descendants from the original Morgan, and illustrate the assertion which we made above. As a further illustration of this principle, if any were needed, running all through the Morgan family, especially in case of the *male* colts, I might mention Old Morrill, grandsire of Draco, Mountain Maid, Hiram Woodruff, and the justly celebrated Fearnaught. Here is another descendant by a direct line from Justin Morgan, marked strongly with the family type; marking his colts with the same type, fighting bravely, and maintaining himself against the incoming of foreign elements, — elements too, be it said, of the most potent character. Look at the pedigree of Old Morrill as exhibited in Table V. of the Supplement, and observe how the Morgan blood has to contend for the possession of the channel against three currents that find their source in imported Dio-

med, and three other streams that come pouring in like a torrent from imported Messenger; and yet the Morgan blood is royal enough to contend at odds against royalty, and takes the six streams of imported blood, mingles it with itself, and rolls along as calmly and as true to itself as before. I trust I am not opinionated; but I would ask, What other horse, imported or home-bred, has ever founded a family able to perpetuate its characteristics, and defend itself against the intrusion of foreign blood, as has the Morgan? Where is the imported Messenger type invariably true to itself? Where is imported Diomed, as discerned in his descendants? Where is imported Bashaw, out of whose trunk the Clay branches have all sprung? Where is *any* horse, or family of horses, whose type of outward conformation and temperament even have survived seventy years of outcrossing and admixture? The horse and family do not live, I reply. The Morgan, and the Morgan alone, is worthy to stand upon the pedestal in answer to such an interrogation. Whatever else he lacked, neither he nor his descendants lacked or lack the power to reproduce themselves. It is for this reason that I give it as my deliberate opinion, that, other things being equal, the stallion with the largest amount of Morgan blood in his veins will prove the best stock-horse. It is undoubtedly to the presence of this blood in their veins that Fearnaught, Ethan Allen and his son Lambert, Taggart's Abdallah and his descendants, and the Morrills of Vermont, are able to mark

their offspring with their own characteristics. They are indebted, every one of them, to their old ancestor, Justin Morgan, for the possession of that rarest of all faculties in horses, — the power to reproduce their own excellences, — and which, derived from him, has won them fame, and their owners large incomes. We all live in debt to-day to an animal which so many horsemen underrate, if not despise, but which, in our opinion, gave to the country more handsome, docile, serviceable, and *fast* horses, than any animal America ever had. But, leaving this topic for subsequent discussion, — and we propose to give the reasons for our emphatic assertion before we are done,— we lay it down as the first maxim of intelligent breeding, *that a stock-horse is to be judged by his stock rather than by himself, and that the stallion that gets the best colts is the best one to patronize.*

But what is it that the sire gives to his descendants? and how far, and in what, as compared to the dam, does he dominate over his offspring? This, perhaps, should be the next point for us to consider. We will proceed to do so; premising, at the start, that the answer will not, in all points, be full or satisfactory. Indeed, the processes of Nature are often hidden, and the springs of her influence concealed; nor can man by searching find them out. Especially is this true in this matter of the causation and reproduction of life. The mists and vapors which geologists tell us swathed the infant world in the creation period swathe all infant life

to-day. It exists in unknown conditions and obscure relations before it is seen. How much the boy owes to the father, and how much to the mother, and how he came to owe the same, or more, to one than to the other, we do not know. How much nature is shaped in the germ, independent of condition and circumstance, or how much, on the other hand, circumstance and condition affect the germ, who can say? We can speculate; we can dogmatize: but, while the created mind is ignorant of the processes of its own creation, life, in its origin and pre-natal conditions, must remain largely a mystery. Before I express my own views, I will put before the reader the following principles of breeding, as published in "The Horse-Owner's Cyclopædia," page 99, and which have been highly indorsed by no less an authority than the late Mr. Herbert ("Frank Forester").

The author says, under the head of

THEORY OF GENERATION, —

"1. THE UNION of the sexes is, in all the higher animals, necessary for reproduction; the male and female each taking their respective share.

"2. THE OFFICE OF THE MALE is to secrete the *semen* in the *testes*, and emit it into the *uterus* of the female, in or near which organ it comes in contact with the *ovum* of the female, which remains sterile without it.

"3. THE FEMALE forms the *ovum* in the *ovary;* and at

regular times, varying in different animals, this descends into the *uterus*, for the purpose of fructification, on receiving the stimulus and addition of the *sperm-cell* of the semen.

"4. THE SEMEN consists of two portions, — the *spermatozoa*, which have an automatic power of moving from place to place, by which quality it is believed that the semen is carried to the ovum; and the *sperm-cells*, which are intended to co-operate with the *germ-cell* of the ovum in forming the embryo.

"5. THE OVUM consists of the *germ-cell* — intended to form part of the embryo — and of the *yolk*, which nourishes both until the vessels of the mother take upon themselves the task; or, in oviparous animals, till hatching takes place, and external food is to be obtained. The ovum is carried down by the contractile power of the Fallopian tubes from the ovary to the uterus; and hence it does not require automatic particles like the semen.

"6. THE EMBRYO, or young animal, is the result of the contact of the *semen* with the *ovum;* immediately after which the *sperm-cell* of the former is absorbed into the *germ-cell* of the latter. Upon this a tendency to increase or 'grow' is established and supported at first by the nutriment contained in the yolk of the ovum, until the embryo has attached itself to the walls of the uterus, from which it afterwards absorbs its nourishment by the intervention of the *placenta.*

"7. AS THE MALE AND FEMALE *each furnish their*

quota to the formation of the embryo, it is reasonable to expect that each shall be represented in it; which is found to be the case in nature. But, as the food of the embryo entirely depends upon the mother, it may be expected that the health of the offspring, and its constitutional powers, will be more in accordance with her state than with that of the father: yet, since the sire furnishes one-half of the original germ, it is not surprising, that, in external and general character, there is retained a FACSIMILE, *to a certain extent, of him.*

"8. THE OVUM OF MAMMALIA differs from that of birds chiefly in the greater size of the yolk of the latter, because in them this body is intended to support the growth of the embryo from the time of the full formation of the egg until the period of hatching. On the other hand, in *mammalia* the placenta conveys nourishment from the internal surface of the uterus to the embryo during the whole time which elapses between the entrance of the ovum into the uterus and its birth. This period embraces nearly the whole of the interval between conception and birth, and is called *utero-gestation.*

"9. IN ALL THE MAMMALIA THERE IS A PERIODICAL 'HEAT,' marked by certain discharges in the female, and sometimes by other remarkable symptoms in the male (as in the rutting of the deer). In the former it is accompanied, in all healthy subjects, by the descent of an ovum, or ova, into the uterus; and in both there is a strong desire for sexual intercourse, which never

takes place at other times in them (with the single exception of the genus Dimana).

"10. THE SEMEN retains its fructifying power for some days if it is contained within the walls of the uterus or vagina, but soon ceases to be fruitful if kept in any other vessel. Hence, although the latter part of the time of heat is the best for the union of the sexes, because then the ovum is ready for the contact with the semen, yet, if the semen reaches the uterus first, it will still cause a fruitful impregnation, because it remains there (or in the Fallopian tubes) uninjured until the descent of the ovum.

"11. THE INFLUENCE OF THE MALE upon the embryo is partly dependent upon the fact that he furnishes a portion of its substance in the shape of the sperm-cell, but also, in great measure, upon the effect exerted upon the nervous system of the mother by him. Hence the preponderance of one or other of the parents will, in great measure, depend upon the greater or less strength of nervous system in each. No general law is known by which this can be measured; nor is any thing known of the laws which regulate the temperament, bodily or mental power, color or conformation, of the resulting offspring.

"12. ACQUIRED QUALITIES are transmitted, whether they belong to the sire or dam; and also both bodily and mental. As bad qualities are quite as easily transmitted as good ones, if not more so, it is necessary to take care, that, in selecting a male to improve the stock,

he is free from bad points, as well as furnished with good ones. It is known by experience that the good or bad points of the progenitors of the sire or dam are almost as likely to appear again in the offspring as those of the immediate parents in whom they are dormant. Hence, in breeding, the rule is, that like produces like, or *the likeness of some ancestor.*

"13. THE PURER OR LESS MIXED the breed, the more likely it is to be transmitted unaltered to the offspring. Hence, whichever parent is of the purest blood will be generally more represented in the offspring: but as the male is usually more carefully selected, and of purer blood, than the female, it generally follows that he exerts more influence than she does; the reverse being the case when she is of more unmixed blood than the sire.

"14. BREEDING 'IN-AND-IN' is injurious to mankind, and has always been forbidden by the divine law, as well as by most human lawgivers. On the other hand, it prevails extensively in a state of nature with all gregarious animals (such as the horse), among whom the strongest male retains his daughters and grand-daughters until deprived of his harem by younger and stronger rivals. Hence, in those of our domestic animals which are naturally gregarious, it is reasonable to conclude that breeding 'in-and-in' is not prejudicial, because it is in conformity with their natural instincts, if not carried farther by art than Nature teaches by her example. Now, in nature, we find about two consecutive crosses

of the same blood is the usual extent to which it is carried, as the life of the animal is the limit; and it is a remarkable fact, that, in practice, a conclusion has been arrived at which exactly coincides with these natural laws. 'Once in and once out' is the rule for breeding given by Mr. Smith in his work on the breeding for the turf; but twice in will be found to be more in accordance with the practice of our most successful (early) breeders.

"15. THE INFLUENCE OF THE FIRST IMPREGNATION seems to extend to the subsequent ones: this has been proved by several experiments, and is especially marked in the equine genus. In the series of examples preserved in the Museum of the College of Surgeons, the markings of the male quagga, when united with the ordinary mare, are continued clearly for three generations beyond the one in which the quagga was the actual sire; and they are so clear as to leave the question settled without a doubt.

"16. WHEN SOME OF THE ELEMENTS of which an individual sire is composed are in accordance with others making up those of the dam, they coalesce in such a kindred way as to make what is called 'a hit.' On the other hand, when they are too incongruous, an animal is the result wholly unfitted for the task he is intended to perform."

The above rules, or "principles" as the author names them, appear to me to be in the main correct, and of great value to the student of the question; but they do

not supply that detailed knowledge required by the breeder, nor are they sustained by such testimony of fact and illustration as one might desire.

The Arabs hold that the essential portions of the body, such as the bones, tendons, nerves, and veins, proceed invariably from the sire; and it is undoubtedly true that the shape of the bones, and nervous diseases, and weaknesses of the bone-structure, are derived principally from that source. I would sooner breed, for instance, a diseased mare to a healthy stallion, than a healthy mare to a diseased stallion.

Certain it is that from the sire the colt commonly derives his nervous vigor, and those moral qualities which serve to distinguish and ennoble the well-bred horse. The Arabs have this maxim, "A horse of noble race has no vices;" and also this, "The foal follows the sire."

With this estimation I do not at all agree. The instances in which the foal does not follow the sire are too numerous for us to allow that the Arabian maxim is worthy of being regarded as a law. Even a casual inspection of my own stables, or the stables of any breeder, would cause a grave suspicion to arise in any thoughtful mind touching the Eastern adage. I have, for instance, in my stables, dams whose foals invariably resemble the sire in size, shape, color, style of going, and even in temperament; and these mares are valued by me as almost beyond price, because of this peculiarity. *I know beforehand what I shall get.* On the other hand,

I have two other mares whose colts invariably resemble themselves, or some one of their parental ancestors. So true is this, that I can calculate before the foal appears what he will *not* be, although I may not easily tell what he *will* be. Such are the *facts* in my own stables; and they harmonize perfectly with the results of observation in many other breeding establishments. The law plainly suggested by inference from these facts is this, *that the animal with the strongest vitality marks the foal.* If the dam be most highly organized, then the foal will resemble the dam; if the sire, then the foal will resemble the sire. This is the law, as we all know, in the human family: if the mother be of nervous, sanguine temperament, and the father lymphatic and sluggish, the child will take after the mother; if the conditions be reversed, the result will be the reverse. Exceptions there may be and are; but the law stands firm, vindicating its truth with each successive generation. I am bound, nevertheless, to say that this law does not hold good in cases where we should naturally expect it would. To illustrate: According to the law, when a low-blooded mare is bred to a thorough-bred horse, the foal should resemble the sire; but, alas! too often he does not. On the other hand, according to the law, a blooded-mare bred to a low-blooded horse should bring forth a colt like herself; but neither is this true. What, then, becomes of the law? I confess that I do not know; nor have I been able to find in the works of any author a satisfactory answer to the puzzle. Practically

although I cannot philosophically account for my preference, — yet *practically*, I say, we know that it is far better to have a high, fine organization in the sire, and let the low organization, if it must exist in either parent, be on the side of the dam. The fact is, both parents should be highly organized; and any thing short of this introduces uncertainty as to what the result of the experiment will be. The only infallible rule — the best statement ever given touching the reproduction of any form of life — was published by God himself in his inspired word, when he said, "Let the earth bring forth the living creature *after his kind*." This, nevertheless, must be observed, — that the power to bring forth after *his kind* — if *by his kind* we mean personal resemblances rather than generic attributes — does not belong to the horse as a race, but to the horse as an individual; for, as we have already pointed out in the case of Justin Morgan, this faculty of reproducing excellences is individual, and not general. And so we come back to the same observation previously made in regard to what constituted a valuable stock-horse, — viz., that the best horse is he, who, being good in himself, most surely and closely reproduces himself in his offspring; and to this formula should now be added the words, *when bred to the mares of the greatest variety of form and temperament.* Let us, then, turn our attention to the consideration and enumeration of those attributes, which, being possessed, render a horse unfit for stock-purposes. The first we have already men-

tioned, — the inability to reproduce themselves. The second point to be observed is this, — avoid

A LOW-BRED STALLION.

This term "low-bred" is not a mere technical term, a creation of a ring of horsemen, but represents something solid and tangible to the understanding. A low-bred horse is faulty in his bone-structure, vicious in his temper, sluggish in action, and lacking in those higher qualities — such as courage, docility, and beauty — which distinguish a well-bred horse. The term also describes his ancestry, and links a base result with base causes. I do not wish to be understood as saying that a thorough-bred stallion is invariably worthy of the stud; for, as I have already pointed out, only now and then one is: but while the thorough-bred may be, or may not be, a low-bred brute *never* is. Beware of nothing so much as a low-bred stock-horse. His services cannot be offered so cheap, that they will not, in the end, prove dear; because the colts from such a horse, when ready for the market, will bring less than they have cost the owner to raise them. No stallion without a good sound pedigree should ever be patronized.

The law in respect to this matter is, that the foals will, in most cases, resemble the father, or some precedent ancestor; in either of which cases the result will be equally unfortunate. It cannot be denied that the characteristics of ancestors do continue, ever and anon, to re-appear in their descendants: and hence, in breed-

ing horses, pedigree — that is, the character not only of the parents, but also of grandparents and great-grandparents — becomes worthy of close attention; and when the pedigree of dam and sire both is known to be good, and they themselves are good, it is evident that little fear may be felt touching the character of the foal. For if he resembles his immediate parents, or if, skipping these, he appears stamped with the impress of some ancestor, the result must, in either case, be the same. This it is which gives to the pedigrees their value in the eye of the breeder. It guarantees him against total failure, to say the least; and insures a greater success than the quality of the immediate parents would perhaps make possible. But, if a horse without a pedigree should never be patronized, the breeder should bear in mind that a good pedigree does not make a good horse. I have known animals, with a pedigree as long as your arm, who were not worthy of the least attention. Find the horse first; then examine the pedigree: and if they correspond, and mutually sustain each other, then purchase; for you have met an animal greatly to be desired. Remember always, that none save the *highest types* of a family can be expected to reproduce the valuable characteristics of the family. Because a stallion was sired by Rysdyk's Hambletonian, it does not follow that he is worthy of being bought or kept for a stock-horse; and yet, with many of our committees at agricultural fairs, the fact that a colt was sired by a Rysdyk's Hambletonian is enough to secure for him both attention and the prize.

VICIOUS STALLIONS.

Especially I would urge all breeders to avoid vicious and irritable seed-horses. The idea that a stallion is less amiable than a gelding is both contrary to nature and observation, and, in common with many other erroneous opinions resulting from ignorance, confined to this country. An irritable temper and a vicious disposition are hereditary — superlatively so — in horses as well as in men. I know families that have been noted for fretfulness and ugliness of spirit for generations. Viciousness seems to be the family mark: it comes down from sire to son in uninterrupted sequence. So it is with horses. A vicious sire begets a vicious colt. Exceptions there may be; but the law holds good in the main. I have known a seed-horse at death leave the county where he stood full of ugly brutes: they were intractable, fretful, hard to teach; they would rear, bite, and kick. You could never make them docile and kind: they were unpleasant and dangerous. Now, I hold that no one should breed to such a horse. No perfection of muscle and frame, no high-sounding pedigree, no marvellous record on the turf, would influence me to put one of my mares to such a horse. I want no vicious colts in my stalls. None but an amiable, docile, kindly-disposed animal should be selected for service in the stud. This rule is of special importance to the breeder, as it is directly related to the successful sale of his colts. Gentlemen do not wish to

buy an uneasy, fretful, and fractious thing. It is uncertain and dangerous business to train and teach such an animal. There is too much risk about it. Nothing advertises a family of colts so badly as viciousness, or that fickleness, or irritability of temper, bordering close upon it. Seeing that this matter is clearly within one's control, I hold that it is a high misdemeanor in a breeder to breed a vicious colt. He has no right to introduce a force into the world which man cannot easily and safely manage.

But, if one has no right to breed to a *vicious* stallion, neither is it wise for him to breed to one when he is in an *artificial* state. I will explain this more fully. When life is propagated in the animal kingdom, the life produced is the product of the union of two lives, and takes its character from the character of the parental source. The foal is a representative of the sire and dam both, and of the sire and dam, not as they might have been, but *as they actually were* at the time of its conception. Not alone the general health of the two parents is transmitted to the offspring, but the particular habit and mood of life in which they then were. The nervous and temperamental states and conditions were transmitted also. Hence it comes about, that as, in the case of human species, the babe conceived in drunkenness is apt to be idiotic, and in other respects imbecile; so the foal conceived when the sire and dam, or either, were in an unnatural, excited, feverish state, will come into the world sensibly affected and weakened from

this cause. The influence of the nervous state on the offspring of the human family is well understood; and not alone of the nervous state, but of the state of the blood, the condition of the bones and muscles: these are regarded as potential in their influence on the life destined to be born. These things have not been considered by breeders of the horse with the close attention which they deserve; but he who has observed how high the organization of the horse is will see that these influences must be duly regarded by one who seeks to breed the perfect horse. The law is, that the state of the parents is the state of the child. As the dam and sire are, so will the foal be. Fevered parents beget fevered children: this is the rule. Now, horses, when in training for the turf, or engaged in actual contests, are in a most artificial state: their nervous system, their blood and stomach, are in an unnatural condition; they are strung up, excited, inflamed. How true this is may be seen from the fact, that, when they have passed through the *grand preparation*, they often get sick if the race for any reason is deferred. They, as well as their trainer, know that a great occasion is to come off in which they are to figure; and they are uneasy and excited until the great feat has been done or attempted. Moreover, it should be remembered that training and track work take stuff out of a horse. The animal is able to do one great deed; but this ability has been secured at the expense of a great constitutional disturbance. The normal, healthy course of nature has been inter-

rupted, and made subordinate to another consideration. Now, all this, continued season after season, affects the animal most injuriously.

He may not actually break down; but the reserve force has been drained away, and his stamina impaired. Now, let a stallion thus superficially in the highest possible condition, but latently and in fact in an impaired condition, become a sire, and the foal will share, not the *original* constitutional characteristics of the horse, but those *artificial* peculiarities introduced by his public career and training therefor. Hence it comes about, that few horses of either sex noted for their public performances have ever become the parents of horses good as themselves. Hence it happens that the foals of these horses not only fall short of that degree of excellence which their parents had, but are actually, and in many cases fatally, crippled in force, or made heirs of an evil inheritance. Ethan Allen, for instance, — a horse of superb bone-structure, and belonging to a family noted for constitutional vigor, — got a great many colts with feeble legs: he bred his high-fevered, artificial state into them. Many of his colts have been unpleasantly nervous and excitable; to drive which was a task and a risk, rather than a pleasure. The fact is, no stock-horse should ever be trained for a race, or gotten into abnormal state or condition of health or mood. He should be kept in a healthy, normal state, quiet, and with all his powers and faculties in even poise. The severe training to which colts intended to be kept

for the stud are put between the ages of two and six years is one of the greatest obstacles in the way of breeding sound and perfect horses; and the habit of stinting mares to such horses, on the part of breeders, is unmitigated folly. It is the surest way of committing *hari-kari* in breeding that I know of. My advice, therefore, is, Avoid stallions kept, or that have been kept, for the purposes of the turf, and put your mares to stallions of good pedigree which show good trotting-action, — able to trot, say, a mile in 2.40, — of amiable disposition, of undoubted constitutional vigor and soundness, and in a *natural state*. Such a horse will — if, in addition to these other qualities, he have the power to transmit them to his offspring — prove a good, safe, reliable stock-horse. His colts will be healthy, strong, and vigorous. They will have lasting legs and lungs, stomachs able to digest food without the help of "condition powders," and tempers fine, but reliable as a Damascus blade. Breed to such a horse, and you will have gone far, in so doing, along the road of success.

Furthermore, suffer this caution: Never breed to a horse because he has a high-sounding, fashionable name, with a corresponding pedigree attached. It is astonishing how many Fearnaughts and Abdallahs and Morrills and Hambletonians there are. Perhaps the last-mentioned name is abused the most. All over New England and the country, you will find Hambletonian this and Hambletonian that advertised to the breeding public, that are not worth, for stock-purposes,

the bedding they stand on. Big-headed, big-legged, but-ended things, they point the satire on human credulity that could be persuaded into breeding even a third-rate mare to them. The fact is, the Hambletonian family, great and worthy of patronage as it is, is worthy of patronage only in the case of its *finest representatives.* If Dexter had not been castrated, he would have been about my idea of a stock-horse in every thing but his temper; and I am inclined to think that that was naturally excellent: but Dexter is the result of that one especial cross with a star-mare which Hambletonian "hit" well with. A son of the old horse with a star-mare, or indeed any thorough-bred mare, for its dam, is, generally speaking, a good horse: but it is a notorious fact that Old Hambletonian (Rysdyk's) does not cross well with the average run of mares; neither do his sons. With the exercise of proper discrimination in respect to the dam, this family of horses does well; if not, not. If this is true as regards the finest types of the family, what must be the chance in reference to the coarser specimens? I reply, No chance at all; and I look upon it as most unfortunate for the country, and sure to result in the disgrace of the family, — whose fame, properly guarded, might endure indefinitely, — that so many of the third-rate colts of this horse's get are now being advertised for the stud. With a great many people it is enough that a horse is a son of Hambletonian; failing to make the distinction, that it is better to breed to the most perfect specimen of a poor family than to the

inferior specimens of the best families. These people cannot be persuaded that a name does not make a horse. But they will find this out to their cost after a few years of silly experimenting in a direction in which experimenting has already been conducted to a demonstration. I would here reiterate the truism, that a pedigree does not make a horse; and that a string of noble names is of no account in breeding, unless a noble animal stands at the end of it. Look at the horse before you pay any attention to his pedigree. A wise man may have a fool for a son; and a great horse improperly crossed will often get a foal in no sense worthy of him. Those who expect, that, because a stallion happens to be half-brother to Dexter, he will necessarily get colts that will grow up to rival Dexter, represent in their mental structure a most unhappy cross themselves. The rule is, that the foal will resemble the *immediate* parents; the exception is, that he will resemble the *remote* ancestor: and those who breed to a poor specimen of a family, expecting that the colts will be like the founder of the family, and not like the immediate sire, are breeding in the face and eyes of this prime maxim. Select a stock-horse who is great in *himself and his ancestry*, and not noble only in his parentage, and you will be following the rule which the law of nature and the evidence of all observation indorse as correct and imperative. The moment that this law is apprehended and obeyed by the people, a great many stallions — great only in the greatness of

their sires — which are now being offered as stock-horses to the public will go to the string-team or to the dogs, where they belong: and it makes no difference to which; for they are absolutely worthless for the purposes of the stud.

Concerning the proper age of service, authorities differ, and men disagree. Every one has a right to his own views; but I am disposed to think, that, the extremes of age and youth being avoided, no difference exists in the value of the get. Many are strongly prejudiced against breeding to young stallions before they have reached full maturity, and become "thoroughly seasoned," as they say; but the facts show that some of the best horses ever foaled were sired by mere colts. As a matter of interest, and as a case in point, we give below the ages at which Hambletonian got his best foals: —

Alexander's Abdallah was got when Hambletonian was two years old, Volunteer when he was four, Edward Everett when he was five, Dexter when he was eight, Bruno when he was eleven, Sentinel when he was twelve, Jay Gould when he was fourteen, Gazelle and Aberdeen when he was sixteen, and Startle when he was seventeen.

Here are horses sired all the way from *two* years to *seventeen;* and certainly none would say that the old horse ever got a better stallion-colt, or one that has reflected, in the main, more honor upon the sire, than Alexander's Abdallah. Aberdeen is a noble horse, but

no better than Volunteer: Jay Gould is remarkable; but Edward Everett is equally noted. The dam of Ethan Allen, if my memory serves me, was twenty-four years old when she dropped him; and yet I might mention others as famous after their kind as the little bay stallion, whose dams were fillies of three or four years. The prejudice, therefore, against breeding mares to young stallions, is not warranted by facts. No horse can reach maturity, perhaps, before he is eight or ten years of age; and many horses have sired their grandest colts long before they came to that age. It is also known that many of the most talented men and women of the world were the first or last born of their parents; and that in no respect are those born in middle age, when the physical and mental powers of the parents may be said to be in the state of high development, superior to the earlier or later born. Nor does it seem to injure in any way the colt to serve a reasonable number of mares, — in his second year, from five to ten; in his third year, from ten to twenty; in his fourth year, from twenty to thirty: this I hold to be well within the line of safety. A colt well put together, and fed and exercised judiciously, would not, in my opinion, be injured by such service, but rather improved. At this time of life he is manageable, and can be educated to cover the mare properly, and in gentleness of fervent but controlled desire, and not in the frenzy of wild and savage license. The proper education of a high-bred stallion-colt for the purposes of the stud is the duty, as

it should be the ambition, of every owner. A fractious, lawless, violent horse is a disgrace to the head groom and the stable. A horse that cannot be controlled by a word is not fit to serve a mare. The squealing, plunging, savage sort are unfit for public service, and should be avoided by the breeder. In addition to the fact that they endanger the health and life of the mare, they also *impress* her unfavorably; and these parental *impressions* have, as I hold, much to do with the life and character of the foal. Every fortunate birth, over which the Fates smile propitiously, is the result of fervent but amiable intercourse, to which either parent yields with gladness, and not the result of an insane and brutal act from which the female seeks to fly in fear and terror. And I hold it to be a law written in the very nature of things, that a violent, ungovernable stallion is unfit for the purposes of the stud. When breeders refuse to stint their mares to such brutes, they will disappear, and not before. The owners of such creatures can only be reached through the pocket. Mercenary considerations they feel the force of, and none others. Let these violent stallions alone, and their owners will get better ones, and not before.

Touching the state of the stallion's health at the time of service, this should be said: It should be perfect; and perfect health in the horse kind, allow me to remind the reader, is not shown by *fatness*. A horse is not a hog; and that state which types the excellence of the one does not type it in the other. Fat stallions are

unfit stallions to breed to. A stock-horse should, by judicious exercise and dieting, be kept at just that point at which the nervous and muscular forces are at the flood. It is astonishing how much exercise a stock-horse can take, and keep improving in his nervous and muscular condition all the while. From ten to twenty miles a day is not generally too much work during the covering season: with this amount their condition will be superb. What a coat, what eyes, what limbs, they will have! How little like a pig, and how much like a horse, they will look when led from the stall! A horse thus treated will also be a sure foal-getter. Half of the mares he served will not be returned upon him the next season. Indolence on the part of the sire during the covering season is the curse of American breeding. I know stallions in New England that are fat as swine, and are rarely driven a mile, but stand day after day in sluggish, vigor-sapping idleness. What colts can you expect from horses kept in such a condition?

I have already given my views as to the degree of influence derived from either parent; but I may say here, that I would never breed a mare to a stallion with the expectation of getting a trotting-colt, unless the stallion could trot. The *trotting-action* seems to be peculiarly the gift of the sire, *provided* that he is not weak in those nervous and constitutional forces which enable him to repeat himself in his offspring. A horse with trotting-action, but weak in *vital* force, will not be apt to transmit his way of going, or any thing else of

himself; but, other things being equal, you may expect that the sire will give his action to his colts. I might mention horses remarkable for this, — horses that mark their colts so decidedly with their action, that it alone is sufficient to designate their parentage. Such a horse, if his *style of going* is good, is invaluable to the breeder. I emphasize "style of going," because many stallions that trot, and trot fast too, do not trot *well*. Considerable speed can and does often co-exist with a faulty action; and this should be noted. A great many stallions trot too *wide;* that is, they have *too open* a gait. Such an action is faulty; and the reason is this: It is necessary, as all admit, that, in speeding, the action of the hind-legs should be wide enough to allow the feet to pass outside of the forward-legs. This is indispensable. But it should be borne in mind that every inch of lateral action requires exertion, costs effort, and exhausts strength; and that the horse should be gaited, therefore, so as to "open up" no wider than is absolutely necessary in order to get safely by his fore-legs; for every inch of side-action beyond this is unnecessary, and a source of exhaustion, when every ounce of strength is needed to bring him home in time. What we want is *motion in a straight line*, or as near a straight line as the circumstances of the case will permit; and he is the best horse who "spreads" enough to go clear and free, and stops there. I hold, therefore, that these over-wide-gaited horses are of faulty action. They and their get show excellently on the exercise-ground, or when led

at our fairs up and down before the judges' stand to the halter; for they literally make a great spread, attract the popular eye, and enable every fool to see that they have got trotting-action. But these colts that trot so wide, that they could trot with a flour-barrel between their legs, do not trot so well, I notice, at the end of the heat as they do at the beginning, and are generally found at the wrong side of the distance-posts at the conclusion in a well-contested race of the fourth or fifth heat.

I have a stallion in mind, as I write, that trots a three-minute clip — so perfect is his knee-action, and quick is his gather — without "opening up" at all, but that can "open up" enough to show his heels to many wider-gaited horses, when it is necessary to get his nose to the judges' wire quicker than 30 sec. And, what he can do the first heat, he can keep on doing the fifth, sixth, or seventh heat, or all day, for that matter: and the reason is, because he does not waste any force by *side*-action, but delivers his strokes in a straight line; and every inch of movement brings him an inch nearer home. And this is the style of horse that will invariably win when the contestants are many, the race a close one, and endurance every thing. Now, the colts of this horse resemble their sire in this their style of going. When led to the halter, they do not "open out" at all, or very little, because the groom cannot make the pace fast enough for them to feel the need of effort; and I doubt if many judges at the New-England fairs would ever regard them as worthy to

compete for prizes among colts of the wide-going, Morrill action. But when these little trappy, quick-stepping fellows are grown up, and happen to be called Dauntless or Ned Wallace, the backers of the Morrill and Tom Jefferson stock find that they have trotting-action enough to get them round to the wire about two lengths quicker than it was for their interest to have them get home. I must confess to a growing dislike to this excessive wide action of the hind-feet: it may impress the crowd, and secure purchasers from that large number of people who never reason upon any thing, but who buy a horse, as the drunken sailor bought his ladder, "because it was so well ventilated;" but to me it argues weakness or faulty construction where both are fatal to the highest form of success. While, therefore, I would breed to no stallion who had not a trotting-gait, I should not be especially attracted to one noted for "wide action" as the phrase is; and if this width of action is associated, as is often the case, with slowness of gather, — that is, if his hind-feet went very wide apart, and *staid under the sulky a good while*, — I would not breed to him anyway. This tardiness of gathering is a bad feature in a horse: a slow-gathering horse will never trot *fast*, no matter how open his gait, or how long his stride. I have seen horses stride a distance of seventeen feet when they were not trotting better than a 2.50 gait. These slow-gathering horses are generally long-backed horses; and horses with long backs, unless splendidly developed over the loins, are apt to gather slowly. The power to bring their feet up

from under the sulky with a twitch, and shoot them ahead as the arrow is shot out of a bow, is not in them. Select a stallion short in the upper line, and long in the lower line, strongly coupled over the hips, and the distance between the hip-bones and spine-bone swelling with ridges and masses of muscle that you can see play and work like great pulleys when taking their exercise, and you will get colts from him that will stride far, and gather like lightning. As to the height and size, I say unhesitatingly, that the perfect horse in these respects is one that stands fifteen hands and two inches high (sixty-two inches), and weighs ten hundred and fifty pounds. This is the standard of perfection; an inch either way in height, or fifty pounds in weight, is allowable: but for speed and endurance, for the purposes of general driving, and for the track, and, therefore, for the purposes of breeding, no stallion should weigh less than a thousand, or more than eleven hundred pounds; neither should he stand higher than sixty-three inches, nor lower than sixty. It used to be thought, that for the purposes of the track, and in order to be good weight-pullers, large-sized horses were indispensable; but when men saw Flora Temple, barely tipping eight hundred pounds, pull the same weight as the great stallion George M. Patchen, and get her nose in at the wire a little quicker than he could, heat after heat, they had to go back on their favorite theory. Theory and speculation are excellent in their place and way; but they are useless when put over against the logic of facts;

and the fact is, that the best weight-pullers of the country, since the first trotting-race was made, have been horses of medium size, and, in many cases, even under-sized. Many illustrations of this I might offer in way of proof.

Now, if horses of this weight and size can do all that any of the horse-kind can do, why should they not be regarded as the model horse; that is, the size and weight with which the Creator has associated the greatest speed and endurance? Nor, indeed, is excessive weight a proof of strength. Old Justin Morgan, when weighing less than nine hundred pounds, would pull a log heavier than any twelve-hundred-pound horse that could be found in the States of Maine and Vermont. He would not only pull a log that these heavier horses could not even start, but pull it with two heavy men sitting astride of it. In view of these facts, is not all weight above the standard suggested excessive weight? Does it not burden a horse, endanger his limbs, imperil his feet, and detract materially from his general value? The Hambletonian and Morrill stock, because of the speed and general excellence of their get, set the fashion, and caused large-sized horses to be eagerly sought for and demanded, and the Morgan family of horses to be despised as undersized. But this was only an accident, and the fashion of an hour. After twenty years of breeding and use, we know that heavy horses cannot stand work on our paved avenues and stone-bedded roads; and we also know that they can neither trot faster, nor

stay longer, than the ten-hundred or ten-hundred-and-fifty pound horse. My advice, therefore, is, to breed from a medium-sized stallion; and, if you wish to enlarge the size of your colts, get the extra size by a cross with large-sized mares. I do not say that this is the indispensable way; but it is the better way, as I judge; and I therefore recommend it.

This matter of *crossing* naturally introduces the vexed question, "What shall we cross with?" The matter of blood — what it symbolizes, and where it can be found — and of in-breeding comes before us naturally at this point for discussion; and we will here group together what we have to say, choosing for our general caption the word

THOROUGH-BRED.

All over the country, from Maine to California, in every State where horses are bred, this word is being spoken in hot debate. It has been the cause of more verbal strife among breeders and horsemen than any other word in the dictionary; and still the fight goes on, and with varying fortune. The advocates and opponents of breeding trotting-mares to thorough-bred stallions, and *vice versâ*, have their alternate successes. One will say, "Nothing but a thorough-bred mare is fit to breed to a good stallion." Another will deny that a trotter can be got from such a cross. One will declare, "We must warm up our cold-blooded mares by breeding to thorough-bred horses, in order to give *game*, and power to *stay* a distance, to the colts."

Another will point you to a dozen horses that have drifted up to the cities from the barn-yards of Maine, or been bought out of string-teams, — as Dutchman the Wonderful was, — about whose pedigree nothing was known, and of some of which nothing is known up to this day, that were able to trot fast, and *trot all day*, and say, "If that is low blood, then low blood is good enough for me."

Then there is another class, who are neither ignorant nor prejudiced, who doubt the expediency of breeding to running-stock at all, on the ground that the running-gait is so opposite to the trotting-gait, and at the same time so strong and true to itself, that it cannot be overcome in the cross, but will remain dominant in the foal; and that the breeder will find, that, in breeding *in* the running-gait, he has bred *out* the trotting-action.

To this view I give assent; and my opinion is based both upon actual trial in my own stables, and upon observation of many other stables. I hold that a thorough-bred mare of running-action will very rarely produce a foal of trotting-action when bred to a trotting-stallion, or *vice versâ*. I hold that two styles of going, so unlike, cannot harmonize. Like two hostile currents, they fight each other, and come to a stand-still. The colt is neither a trotter nor a runner. He is an excellent, stylish roadster and saddle-horse; and that is all. He is a good horse for many purposes, but not *such a horse* as the breeder desired and expected. This, I say, is my opinion. I thrust it offensively upon no one; but I hold to it.

The question — and it is one of the utmost importance — arises, therefore, "Where shall we get blood, if we cannot go to the thorough-bred running-family? How can we breed colts of sufficient beauty, courage, and endurance to meet the demands of the purchasing public and the turf, if we cannot go to the thorough-bred for our crosses? for it is admitted on all sides that *blood tells.*"

In response to this interrogation I reply, That we must go to *thorough-breds* to find what we need; but we must go to the thorough-bred *trotting*, and not to the thorough-bred *running* horse.

And now I would ask the reader's closest attention to what I am to say; because I deem it of prime importance to the breeder, and likely to be attacked by many.

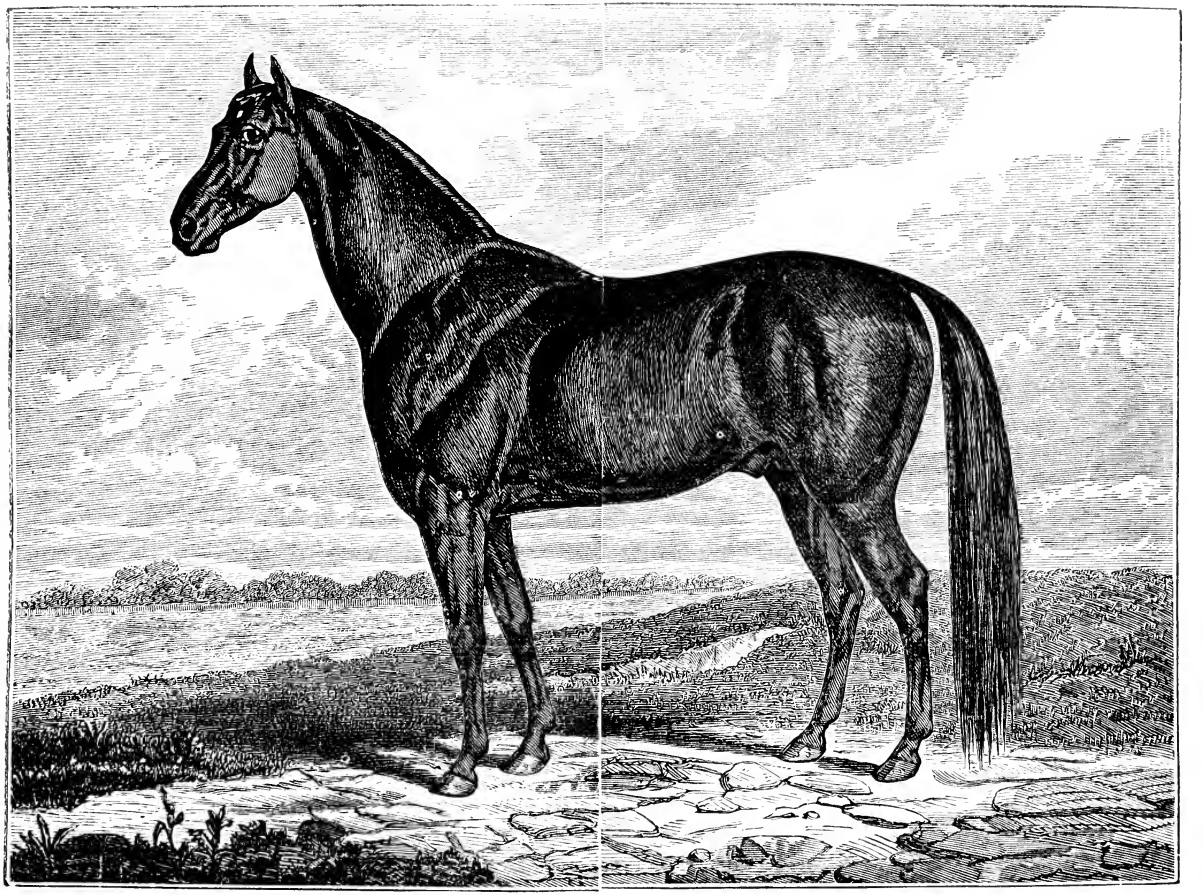
The word "thorough-bred" has an artificial and a natural, a technical and a practical, significance. Technically considered, the thorough-bred horse is one whose pedigree can be traced back through imported stock to the English stud-books, and through these to the East, whence the modern English thorough-bred horse ancestrally came. This is what I call the artificial or technical significance of the word "thorough-bred." It does not prove that a horse is a good animal; for many, both in this country and in England, whose pedigree can be traced back to an Arabian source, are comparatively of little value. In England you can find hundreds of "weedy" colts, with neither lungs nor legs able to

stand the necessary work to fit them for a race, or, indeed, of any considerable value any way; and the same is true with us. To buy a horse simply because he has a long and noble pedigree is to buy as a fool buyeth. And especially does this hold true in the case of breeding; for which purpose, none but the *best specimens* of the family you desire to cross with should be purchased. A poor horse is a poor horse the world over in all families, and in spite of pedigree. A good animal with a good pedigree is what the breeder needs; and this rule should be closely adhered to. To vary from this principle is to risk all.

Beyond this technical sense, the word "thorough-bred" has another and a practical significance, which I will now explain. In the practical sense, the word stands for and symbolizes certain indispensable qualities which give value to the animal, and decide his rank and place in the grade to which he belongs. Among these may be mentioned beauty of form, toughness of bone and muscular structure, vivacity and docility of temperament, intelligence, and above all, perhaps, in value, the *power of endurance, and the desire to do;* what horsemen express by the word "game." All pedigrees are worthless save as they indicate and warrant that the horse with the noble ancestry is noble himself. It is a help to the judgment, as to the value of a colt, to know that its dam is a Star mare; because a Star mare is a daughter of American Star; and American Star was sired by Henry, who ran against Eclipse in the famous

match between the North and South. To a breeder such a pedigree is of the utmost value, because it is a guaranty that the colt out of such a mare will have, to some extent at least, the noble qualities which made his ancestors famous. Now, then, the question comes back to us, "What makes a thorough-bred?" And I say, that, for all practical purposes, a horse which has a certain perfection of form, a certain degree of intelligence, the power to do great deeds when called upon, together with the high courage to attempt and to actually perform them, is a thorough-bred horse. That is my answer to the question; and I think that it will recommend itself to the common sense of the reader. Observe, then, what are the facts of the case as connected with the trotting-horse. The facts are these: that, beginning with Dutchman, and coming down through Lady Suffolk, Flora Temple, George M. Patchen, Ethan Allen, Dexter, and Goldsmith's Maid, we have had for the last fifty years in this country a race of horses of trotting-action of as fine a spirit, and as great powers of endurance, as any that were ever bred. In perfection of structure, in the symmetrical adjustment of all the parts, in intelligence, — that surest proof and crown of good breeding, — in dauntless resolution that stopped not short of death itself in the hour of supreme performance, these horses, and countless others like to them, were, I claim, second to none that ever delighted the eye and made proud the heart of man. I hold that it is unjust to these

noble horses to call them of vulgar or basely-tainted blood. They were kings and queens in that order of life to which they belonged, and proved their royal qualities on many a contested field when the lookers-on stood breathless. I object, both on the ground of sentiment and proper classification, to such a definition of thorough-bred, that, in order to be just to the one class of horses, one must be unjust to the other. Where they are equal in performance, they should be equal in honor. Who shall say that Old Topgallant, when he went against Whalebone four-mile heats, and trotted them in 11.16, 11.06, 11.17, and 12.15, — that is, making his sixteen miles in forty-five minutes and forty-four seconds, which is just 2.52⅛ to the mile, and that, too, when he was *twenty-two years* of age, — is not worthy to stand beside Eclipse, or Henry, or any other horse that ever ran a race? There is a right and a wrong to this thing; and, for one, I assert that the nomenclature is faulty, and the classification vicious, which covers Longfellow and Harry Bassett with laurel, and leaves Dexter and Goldsmith's Maid without a spray. There are, therefore, as I understand the merits of the case, *two* great families of thorough-bred horses, instead of *one*, in this country. The one is the thorough-bred running-horse: the other is the thorough-bred trotting-horse. The time has come for horsemen to understand this, and no longer be fettered by a classification applicable only to a country where the trotting-horse is not known or honored. The English



ROBERT BONNER, OWNED BY H. W. T. MALI.

stud-books are sufficient for England, where the running-horse embodies all excellence; but they are entirely insufficient in this country, where the trotting-horse finds his ancestry, his birthplace, and the field of his glory. There is, therefore, in this country, a family of horses possessing the very qualities for which the English running-horse has so long been noted, and in *as great a degree*, as the history of its performances shows, but which are distinguished from the English thoroughbred by their style of going: and to this family, by every law and rule of justice, the same honorable nomenclature must be given; and I now give it the same, and ask your attention to what I have to suggest touching the

THOROUGH-BRED TROTTING-HORSE.

I have alluded to the matter of out-crossing in order to get "blood," — that is, those high qualities which it symbolizes, — and I have said that it were not wise to go to the running-family for the cross; and this I repeat. First, because, in doing this, you lose the trotting-action; and, secondly, because there is no need to do it, since the same perfection of courage you seek can be found *in the trotting-family itself.* Those of my readers who know any thing of Ethan Allen, Taggart's Abdallah, Old Morrill, or his famous grandson Fearnaught, and Lambert, and the get of these horses, know, that for beauty, intelligence, fineness of temper, and courage to "do or die," they are

not excelled by any stallion of the running-family living; and I will not except the great Leamington, or his greater son Longfellow. I have passed from the stall of Dexter to the stable of Harry Bassett; I have seen Leamington and Longfellow one week, and Fearnaught and Taggart's Abdallah the next; and I solemnly aver, that neither in the sheen of their glossy coats, the bright, courageous look of their faces, the symmetry of proportion, or suggestions of muscular power, did these highest types of the one family excel these highest types of the other.

There is no doubt but that originally we were dependent entirely upon the thorough-bred running-horse to re-enforce the common breed of the country with more generous qualities. It is to imported Messenger and Diomed and Bashaw especially that we are indebted for those excellences which now distinguish our trotting-horses. I would be the first to recognize the obligation that the trotting-family is under to the running-family; and there was a time when the breeder must needs go to the racing-stables for those crosses from which the needed re-enforcement to the weak common blood of the native breed might be obtained. But now, owing to this very outcrossing with the imported thorough-bred and the success which naturally attended it, the trotting-family has become, to all intents and purposes, thorough-bred itself, and able to supply within its own membership every desirable quality and attribute. In localities where this transmission of thorough

blood has not occurred, and only vulgar mares can be obtained, I do not hesitate to advise the importation of mares from running-families for dams. This plan will improve the stock immeasurably; and, after two or three generations of judicious crossing, the trotting-gait will appear in the colts, and the breeder will thus ultimately reap his reward. But, where well-bred *trotting*-mares can be found, give these the preference over mares of *running*-action alone, if your object is to breed trotters. Some breeders, I know, are possessed with the idea that one must resort to the thorough-bred running-family in order to find that symmetrical structure and beautiful appearance which all lovers of the horse delight to see. With this ambition to breed beautiful horses I most heartily sympathize. No degree of speed can atone in my eye for the lack of beauty. Beauty and speed must co-exist, if possible, in every colt bred in my stables. Many, I know, are indifferent to this, and care little how a horse looks, if he can only go. This I hold to be against the course of nature, which ever seeks to produce the perfect; and no horse that is ugly to the eye can be called perfect. Away, then, I say, with your heavy-limbed, ragged-hipped, long-haired, big-eared, bucket-headed horses! I wouldn't drive one a rod if he would trot a mile in a minute. I like the exhilaration of rapid movement, the excitement of the rush, and the royal joy of passing; but the animal that gives all this to me must please the eye. But those who suppose that the thorough-bred running-horse is neces-

sarily beautiful to the eye are greatly mistaken. Imported Messenger was a large, ungainly-looking horse; Mambrino, his son, was badly string-halted; Abdallah, his grandson, was a large, angular-looking creature, with big head, scarcely any mane, ragged-hipped, and a rat-tail. The Melbournes of England are lop-eared. Many of the Clays, descendants of imported Bashaw, are large-headed, coarse-looking horses. I have seen thirty brood-mares, whose blood had flowed down to them through twenty generations, absolutely untainted; and among them all there was neither a head, neck, coat, or form, more beautiful than I can find in a dozen daughters of the old Green-Mountain horse in Vermont. So far as beauty goes, Gifford Morgan was, perhaps, the handsomest horse ever seen on a parade-ground in America. Coat, eye, ear, form, and style, all that man might long to see in a horse, could be seen in him. One of his grandsons, Taggart's Abdallah, is the most beautiful horse I have ever seen, either of the trotting or racing families. Many of the descendants of the Old Morrill horse, whose dams were Morgan mares, and the sons and daughters of Vermont Black Hawk, were so beautiful, as to leave little, if any thing, to be desired. I do not think, therefore, that the breeder need to go outside of the trotting-family to find the highest type of equine beauty.

In another portion of this work I have given my views of the Morgan stock at length; and will only say at this point, that no better cross can be made, by a breeder who would breed handsome horses, than this

half-cross with the Morgan blood. This essentially is the cross that produced Ethan Allen, Fearnaught, Taggart's Abdallah, and many other stallions, whose symmetry of proportion, beauty of color, and nobility of carriage, would have made them celebrated, even if they had not been speedy. There are some daughters of the old Green-Mountain horse in Vermont yet, whose heads are worthy the pencil and brush of a Bonheur. A Hambletonian stallion, if he be a good specimen of his family, put to such a mare, would be likely to get a colt that would look about right when exhibited to the halter, or when flying down the home-stretch.

I have now given my views in all frankness touching this somewhat vexed question of "blood." It is probable that many, to whose judgment in any question relating to what is wise or unwise in breeding grave attention should be given, will not agree with me: such entertain the conviction that we must still rely on thorough-bred running-stock for assistance in our effort to produce trotting-horses that shall have the requisite stamina and courage to stand the work required to fit them for the supreme effort, and the resolution on the day of the race to do the deed demanded of them. But, for one, I am persuaded that this opinion cannot be maintained in the face of the facts in the case. The record of every year is clearly proving that colts bred from trotting-stock on both sides, unassisted by any cross with the thorough-bred running-stock, are abun-

dantly able to do all that horses may be expected to do, and do it right along continually. If this be true, the subject is beyond the need of argument, and outside the boundary of speculation; and breeders of trotting-horses may henceforth regard it as a law in breeding, that trotters can be safely inbred to trotters, as running-horses are inbred to running-horses. And to this maxim my judgment gives a full, unhesitating assent.

In reference to this matter of inbreeding, I am inclined to think that not only should it be done between members of the trotting-family, but that it may also be done with profit in the case of blood relations. I know that many have strong prejudices against this, and that physiologists claim, that, in the human family, it is attended with grave and lamentable results; but, to my mind, the case does not seem to be made out. In the first place, it should be remembered that marriage in the human family cannot be regulated as in the case of animals. You cannot elect and discard at will. Other than scientific principles prevail to bring about the union. Hence it comes about that faults and weaknesses, both as to the mind and body, are increased, instead of decreased; and the child suffers in a double measure from the infirmity of either parent, because he represents the infirmity multiplied by two. But, in the case of animals, the election of partners for the union can be arbitrary, and so imperfections avoided, and excellences greatly and quickly increased. The cases are so unlike, you perceive, that it is not fair to

reason from the one to the other. But, in addition to this, certain facts exist of a character to cause one, at least, to suspend his judgment. The world began with a single pair; and, in the human family, inbreeding, and that, too, of the closest kind, must have been the rule. Who can doubt but that the perfect produced the perfect?

The Jews were forbidden to marry with foreign nations; and in the earlier portions of their history, when under the government of the patriarchs, and comparatively few in numbers, it is fair to suppose that intermarriage must often have been between blood relations. But the Jews, instead of losing stamina and constitutional vitality, have held their own in numbers and mental character, while a thousand nations have perished. Europe also furnishes us with further *data*. There, by reason of the law of primogeniture being enforced in order to retain their great ancestral estates intact, marriages between first-cousins have often been made a necessity. I might mention noble houses, whose ancestral records run back beyond the Norman invasion, whose children have furnished England with her orators, statesmen, and poets, and whose female members have been among the most beautiful, vivacious, and long-lived of the land, in which, nevertheless, for state and property considerations, marriage between cousins has been the rule rather than the exception. I might adduce other illustrations equally to the point; but those already given are enough to make the thoughtful pause

before they pronounce judgment touching the extent and limitation of those laws which the all-wise Creator ordained to govern the propagation of the species. That a limit exists somewhere is undoubtedly true; but, just where the point at which we should stop is located, it is not so easy to affirm. Now, in respect to the horse, history, so far as it goes, seems to be in favor of in-breeding. Indeed, the evidence is unmistakable, and all tending in one direction. To begin with this country, and in the trotting-family: the old Abdallah was the result of a cross between a half brother and sister; Mambrino and Amazonia, his sire and dam, being both gotten by imported Messenger. The old Hambletonian was by Messenger, out of a daughter of Messenger.

One-Eye, the dam of Rysdyk's Hambletonian's dam, was again the result of a cross between a son and daughter of Messenger. Then, again, the Charles Kent mare, whose dam was the result of the incestuous union between the son and daughter of Messenger, was bred to Abdallah, the result of a *like* incestuous union; and the result is Rysdyk's Hambletonian. Observe this order: A son and daughter of Messenger produce Abdallah, — this certainly is as close inbreeding, almost, as one can have, — and the result is the most famous horse of his family; and he gets a son, when bred to his cousin, that founds a family whose fame is known the world over. If we should go to the English stud-books, a list of any required length might be made out,

all going to show that inbreeding, — even to the degree of incestuous union, — when *properly directed* by the breeder, has been and may be the means of producing horses of a degree of excellence otherwise unattainable. Observe the emphasized words, because the limitation they mark out touching this matter is a very significant one. The rule, as I understand the matter, should be this: When inbreeding closely, allow the union to take place only between *perfect* animals. Never forget that the same law which enables you not only to keep alive, but to increase, the average excellence of their ancestors and themselves, at the same time operates to the perpetuation, in an exaggerated form, of all vices and faults. Deficiencies as well as excellences, base as truly as noble qualities, will have a double chance of becoming dominant. If one parent alone is vicious, then the offspring *may* be good-natured; but, if both parents be vicious, then will the foal be sure to be an ugly brute anyway. This is the law which makes all close inbreeding hazardous, and impossible for the average breeder to follow out. I recommend it, therefore, only in those cases where both of the intended parents are perfect animals. Having such animals, I should breed fearlessly in and in. Nevertheless, even in this case, I should outcross occasionally, and afterward breed back again to the original stock. By this method, as I conceive, great benefit might be derived, and all peril shunned.

Such are my views concerning this much-debated and

vexatious question, — vexatious, because no precise conclusion can be drawn as to it. The full solution calls for such a penetration into the secrets of life and life-begetting functions and causes as mortal may never hope to have. But this much is beyond contradiction, — that beginning with Eclipse, who was very closely inbred, down to Hambletonian of our own times, many of the most noted winners, and getters of winners, have been the product of in-and-in breeding so close as to be incestuous; and, while facts have due weight in men's estimate of what is wise and unwise in action, this will be remembered, and will influence breeders, in spite of theory and mere speculation, no matter by whom held or advanced. To me it seems not only safe within certain limits, and advisable on general principles, to breed in and in when the stock is perfect, but the only way in which the breeder can retain in his stables the characteristic excellences, which, by years of selection and experiment, perhaps, he has succeeded in producing.

CHAPTER V.

THE DAM.

I HAVE given at length my views of what constitutes a good stock-horse, and the qualities which he should possess, and what may be his influence on the progeny. I will now take up the subject of the dam's influence upon the foal, and what are the qualities which should characterize her. Touching this subject, I would say, to start with, that the influence of the dam is much more considerable in the majority of cases, in shaping the character of the future colt, than many imagine. To me it seems natural that it should be so. Without reiterating what I have already said in a previous section of this work, I would ask the reader to observe how intimately the foal is connected with the dam, not only previous to its birth, but for a long period afterward. From the very beginning of its life it is fed by the mother's blood, and affected by her moods. Before ever it has seen the light, she has had the time and the power to stamp it with her vices or her virtues, impart to it her weakness or her strength.

Not only the bone-structure, the muscular tissues, the arterial and venous system, and the measure of bodily growth, are decided by the mother's constitutional powers and condition, but the very nerve-structure and brain-force receive from her tone and quality. The foal may be pictured as lying at her mercy, dominated by the sweet tyranny of nature. When thinking of these things, I cease to wonder that many of the most famous horses, both of the past and present time, closely resemble their dams. Dexter takes his look from his mother, the daughter of American Star, who was sired by the thorough-bred running-horse, Henry. Neither in body, limbs, head, nor temperament, does he bear any likeness to his sire, Rysdyk's Hambletonian. The same may be said of Goldsmith's Maid, Lady Thorne, Major Winfield, and others of almost equal celebrity. They are all *mother's* children, as we should say in respect to members of the human family. Every breeder has observed this peculiarity. I have a filly in my stables, sired by a horse of high breeding and great vitality, to whom, nevertheless, she does not bear the *least* resemblance, but is a facsimile of the dam. Color, size, shape, style of going, expression of the countenance, even the way in which she eats her oats, or neighs before they are given her, — in *all* these things she is the dam over again. But, where the facts are admitted, an allusion to them is sufficient; and he who considers the facts must wonder that the dam's influence on the foal has been and is still regarded by many breeders as comparatively insignifi-

cant. To this general law there are certain exceptions. Now and then you find a brood-mare that seems to have no *marking* power at all: they give *nothing* to the foal save the food on which he grows. From the moment he is born, he is perceived to be the sire's own child. The dam seems only to have carried it; been, as it were, a receptacle for it; carried it as something that did not belong to her, but to another, and which she was to feed and nourish and introduce. Only this, and nothing more; for this literally was all she did. She left no stamp or impress of herself upon it at all, either as to size, color, structure, or temperament. Such brood-mares to the breeder are simply invaluable. With them he *knows* what he shall get; and that which defies all calculation, and baffles all intelligence, is removed, — uncertainty. But this is, as I have said, the exception: in the average order of nature it is not so; and hence the character and condition of the dam from which the foal is to come, is, to the breeder, a matter of gravest concern. Several things a brood-mare should be sure to have, which we will now enumerate; the first of which is *blood*. The value of pedigree in this connection can scarcely be over-rated. We take it for granted that no respectable breeder would breed to a horse of unknown lineage. That would be queer breeding indeed! The pedigree of the stallion, then, being known, and the pedigree of the brood-mare being also known, the breeder can forecast, with a reasonable degree of certainty, the characteristics and qualities of the

future colt; the law being that the foal will resemble the parents, or some one of the less remote grandparents. The reader perceives how practical, in this connection, is the benefit derived from pedigrees in breeding. Without them the uncertainty of what the get will be is increased twenty per cent. I do not say I would not buy a mare for brooding-purposes whose pedigree was not ascertained; for I would: but I do say, that, with the pedigree well verified, I should regard her worth considerably more money for the purpose for which I was buying her than without one. But the purchaser should always remember that the animal herself is a better assistance to his judgment than any pedigree, and that no mare should be bought for brooding-purposes because of her pedigree. The horse first, and the pedigree too, is the way to have it stand in your mind. Remember, also, that pedigrees can be created. It is astonishing how long a pedigree can be got up at a moment's notice. Only let the horse-jockey ascertain what blood you prefer, and he will lead you out a daughter of that family in a minute! I do not wish to suggest that horse-dealers are less honest than dealers in other commodities; for men of peculiar moral idiosyncrasies find a playful exercise of their powers in commercial transactions: but I do say that I have met men — dealers in horses — who did not seem to have a full realizing sense of the apostolic injunction, "Lie not at all," especially in this matter of pedigrees, about which more lapses of memory probably occur than any

other subject within the scope of human recollection. It will do well for the tyro to bear it in mind, lest he pay too high for both horse and pedigree.

Touching the frame of the brood-mare, I need give no instruction beyond what is contained in the first ninety-five pages of this work, wherein I describe the structure of the perfect horse. Let her be in every respect good as the best, — that is, as near perfection as you can find, or your purse command, — and you will not go amiss in your selection. But one thing should be mentioned, because, concerning it, men differ, and, as I think, some err. I refer to the *size* of the brood-mare. Many say that the breeder should select a *large mare;* and perhaps, as a general thing, where you wish to breed colts of greater size than the parents, it is better to have the mare larger than the horse. On this plan you escape risk in the act of foaling; for small mares bred to large stallions are sometimes unable to deliver the foal without great effort, and sometimes not at all. To avoid this risk, it is wise to have the dam larger than the sire when you wish to *breed up* in size; but, beyond this, I think the size immaterial. "A large, roomy mare" is a favorite phrase with many breeders; but I could never see what mere bulk had to do with value, unless you are breeding for the cart. Quantity does not dictate quality. The children of large-sized parents are no more gifted than those whose father and mother weigh less. The amount of flesh does not decide the character of spiritual essences, and of those

subtle forces which make life virile; and, for one, I never allow the matter of size to affect my judgment in the least, as I hold that it cannot affect the result. I would not breed a mare that weighed less than nine hundred, or one that weighed more than eleven hundred pounds. From nine hundred and fifty to a thousand and fifty is what I regard as the best weight. Nor does the *shape* affect me much, provided that it be such as makes her good for service. The old breeders thought — and many breeders think to-day — that a drooping rump is the best form for a brood-mare. They argued, from such a formation of the structure, an easy delivery of the foal; whereas they conceived that a mare with a flat or straight rump formation could not deliver the foal easily. But my experience and observation disprove this. The mare that delivers the foal more easily than any other in my stables is one of nine hundred and thirty pounds' weight, with a slim round barrel rather "picked up," narrow between the hips, and her back-bone running out nearly straight to the root of the tail; and yet her colts are invariably strong, and she herself so little exercised in the delivery, that her pulse is never feverish, her appetite not in the least disturbed, nor her digestion affected. We have never even given her a warm mash; and she has brought three large-sized colts into the world. Other instances by the dozen I might give, if it were necessary. I pay no attention, therefore, to the talk about "large, *roomy* mares for breeders," but hold that size alone neither improves the foal, nor

insures greater safety to the dam when bringing it forth. It is quality, not quantity, we need in our brood-mares. The texture of the bones, and the way in which they are adjusted, and not the size of them; the character of the temperament, and not the fleshy bulk, — are what give value to the dam, and, through her, to the foal.

This matter of temperament is of the utmost importance; and I refer the reader to what was said under that head earlier in the volume. Here I need not expand the subject, save that the lymphatic, sluggish temperament is to be avoided. Never select a low, base-spirited mare to breed from. Touching the temper, be particular: under no consideration ever breed from a vicious mare. You have no *right* to do it; and it will not pay to do it. It is the chief glory of the American horse, that he is the most enduring and the most amiable of his kind on the face of the earth, the Orient excepted. Next to the Arabian in docility and intelligence, in love for man, and general hardihood, stands the American. The English thorough-bred is a devil; the Spanish and Italian horses are brutes; the French racer is to be admired at a distance: but the American horse is kind and gentle; and, in the gloss and bloom of grooming and virility, the American stallion can be petted by women, and fondled by children. I confess that I am very proud of this. It argues intelligence and humanity among the people, and noble qualities on the part of our horses. It should be the great ambition of

the breeder and groom to keep this just as it is. Now, the dam, beyond doubt, has immeasurably more to do with the *temper* of the foal than the sire. I have invariably observed that a timid or vicious dam would stamp these peculiarities upon her foal. If she leered, and was ugly, the colt would do just as the mother did; and who can endure a leering, biting, kicking colt in his stables? Never breed from an ugly-tempered mare: for her colts will surely be like her; only, in seven cases out of ten, worse. Depravity gets an earlier development in the child than it had in the parent. Lastly, under this head, see to it that the mare selected for the stud be in *perfect health.*

Feel that there is no exception to this; for every trace of disease in the blood of the dam will, from necessity, be imparted to the foal. The embryo will, from the very beginning, be tainted with disease. All impurities lurking in the parent's system will settle in it. So true is this, that unhealthiness is often bred out of the dam into the foal. The colt is worthless; but the mare is cured. The disease left the mother, and entered into the offspring, as is the case, often, in the human species. See to it that the mare is in perfect health when the horse has connection with her; and, being healthy, then *keep her so.* See to it that she has dry, clean bedding, and a good stall. Do not over-feed, lest she accumulate fat. Idleness is bad. Give her due measure of exercise. More brood-mares are hurt by standing still than by over-work. My brood-mares do moderate

work, in the team and on the road, from the time they are stinted to the horse until within a month or six weeks of foaling. This keeps them healthy and strong, and prevents them from laying on fat. A mare should be kept in an active, muscular condition during pregnancy. The question is asked, whether it is wise to *speed* a brood-mare when in foal. I hold it is, provided it be done with caution. An occasional spurt of fifty rods or so does them good: it keeps their mood right; that is, vivacious, sprightly, and full of healthy animation. This mood they impart to the foal. The maternal disposition and spirit are impressed upon it; for the *mental state* of the dam does have, beyond doubt, a vast influence upon the nervous organization of the foal. As the time of foaling approaches, let the mare rest. Exercise her only to the halter, if at all. Remove her from the narrow stall to the "foaling-room." This should be at least twelve by fifteen feet in size. The floor should be perfectly *level*, — this is essential, — in which she should have her liberty. Give her plenty of clean, dry bedding. If she is a gross feeder, and is inclined to stuff herself with it, put on a muzzle: an ordinary wire ox-muzzle will answer. As the day approaches on which the long-anticipated event is to occur, do not feed very high: especially reduce the amount of hay she is accustomed to have by one-half. Feed with dry food, lest milk be produced too fast. If this be the case, and her bag cakes, wash it in cold water in which a quart of Indian meal has been soaked. This wash will reduce

the fever. If necessary, milk away a considerable amount; but do not milk her upon the ground, but into a pan or basin. Some mares make milk too soon and too fast, but not ordinarily. The rule is, that the foal will be delivered within twenty-four hours from the time when milk, or a milky secretion, first shows itself on the teats. For a month previous to the date of foaling, handle her bag and teats, by which she will become familiar with your touch, and not dread the nose of the foal, as some mares, if not thus educated, do. When all is done that you can do, *let her alone.* Nature in parental exercises loves seclusion, and enjoys silence and secrecy. You should visit the stall from time to time; but be very quiet in your movements, and do not hang round the stall as some inquisitive grooms will. Treated in this discreet manner, ninety-nine mares out of a hundred will deliver their foals safely. When the foal is born, help it to its feet, and assist it to its mother. Be very gentle in your movements, and caress the dam. Some mares, especially young ones, are unnatural at first, and will not own the little thing; but patience and kindness on your part will soon prevail. It is well to give the dam half a bucketful of warm gruel, made thin; and, soon after this, a warm bran or oatmeal mash. If it is cold, and the foal shivers, wrap it in a warm flannel sheet; and, in cases of emergency, give it a tablespoonful of wine, or brandy even; but if brandy, be sure and *dilute* it well. In a few days the dam will have recovered from whatever organic disturbance she

may have undergone, and be well. Nine or fifteen days after foaling, she should be stinted to the horse again; for then she is quite sure to conceive again.

This, in brief, is the order of procedure at this critical and often anxious period in the breeder's experience. The foal should be presented, in the act of delivery, head-foremost, and resting on the forward-legs as a dog lies often when asleep. This is the natural way; and, when so presented, have no fears. If the head should be doubled under, or only one leg come forth, then man's help is needed. Having dipped his hand in warm water or oil, the groom should take hold of the part that is visible, and gently and very *slowly* push the foal back until room is made for Nature to correct what is in fault. If the mare still labors in vain, and a more serious displacement has occurred, send for a veterinary surgeon; or, if no such assistance is at hand, then do the best you can. Circumstances alter cases; and no general written directions will avail. But if the mare is healthy, and has been well treated, the breeder has little to fear; and the chances are a hundred to one that all will go well, and the foal be safely delivered.

Now that the foal is born of known and noble parentage and shapely, let the breeder "rejoice and be exceeding glad." The most desirable form of property, as I conceive, has been added to his estate. To his care and skill some man shall be indebted for a most useful servant and noble companion. By his enterprise he has put the world under obligation to him, in

that he has given to it an agent that it needed, and which, without his efforts, it would not have had. He deserves the benediction of mankind; for he has added another unit to the long column which represents the aggregate happiness of the race. At this point, the question of how the colt should be fed — whether, during the sucking-period, from the dam's milk alone; or whether this should be re-enforced by other sustenance, such as cow's milk, oatmeal-gruel, cracked oats, and the like; in short, what is called by many "the forcing-system," or the reverse — comes up for our consideration. As to this, several things, often lost sight of, must be taken into account. In the first place, it is agreed on all sides that the youngster should not starve: but this he often will do, unless other food than that which comes from the dam is given him; because many dams are such poor milkers, that they do not yield the foal nearly enough to supply his evident wants. In such a case, the breeder must feed the young thing himself. Cow's milk is good, when properly warmed and sweetened. Let it be prepared half blood-warm, and as sweet as the foal will drink it. Three weeks after birth, give some oatmeal, or cracked oats soaked to tenderness in water, or, better yet, in milk. Begin with a handful or two, and increase as the need is. If the mare is a very poor milker, the colt may need two quarts per day. The rule to govern this matter is, — *keep the foal in healthy growth.* As long as his stomach and bowels are in good condition, and he not gaining fat unnaturally, he is doing well;

and your rule of feeding is, by that fact, approved. This, also, should be considered, — that nothing is so bad as to *underfeed* the colt; and according to my ideas and observation, taking the land through, ten colts suffer from want of needed food to one that suffers from overplus of it. The fact is, nothing is more erroneous than the opinion that prevails among farmers and the smaller breeders; viz., that it makes little difference what a colt has to eat the first two years of his life, or whether he has much to eat at all. The truth is, that the first two years of his life decide the colt's entire future. Then it is that the length of his bones, the stomachic and intestinal development, the quality of the skin and coat, and the constitutional powers and vigor, are decided. Feed your colt well the first two years of his life, and, comparatively speaking, you cannot spoil him afterwards: starve him during these years, and you cannot, on the other hand, ever make the lack thereby caused good. New England is, to-day, full of horses that have been ruined in this way. The moment you put your eyes upon them, you know that they were starved in youth. They are under-sized or ill-proportioned, bigger at one end than at the other, ungainly and weak. These are the animals that were compelled to "pick up their living" in the barn-yard with the cows and sheep, and came out each spring lousy and hide-bound. I know that a great hue and cry has been raised about "the forcing-system," and much said against giving oats and

corn to colts. This is said to result in faulty bone-texture, and premature breaking-down of the constitutional powers. This is all humbug. I would not feed corn to a colt, because it is too heating and rank, and unfit, in the main, to give to any horse that is not used for heavy and slow work: but oats are the natural food, as one might say, of the horse; and no colt will ever be hurt by being fed liberally on them. Colts, like grown horses, differ. One requires more food than another, and so no exact rule in feeding can be laid down as regards quantity; but the quantity can be regulated by the condition of the colt, as in the case of older horses. Feed liberally the first two years, and you will never regret it.

For the first month of the foal's life, great caution should be exercised to protect him from accidents, especially in taking his exercise. A foal in good health, after he is a week old, is very playful, and even violent, in taking his exercise; but his eyes are not as yet strong, nor accurate of sight. Especially is he unable to measure distances correctly. I have seen a foal, two weeks old, run full tilt against the side of a barn in broad daylight. The foal should be led, therefore, to a field level and smooth; and, while the dam is held by the groom near the middle of the field, he should be allowed to exercise to his heart's content. In a few weeks he will have got experience, and he can run loose with the dam in the yard or pasture. The matter of his education must now be considered.

CHAPTER VI.

HOW TO TRAIN A COLT.

"With a glancing eye and curving mane,
He neighs and champs on the bridle-rein:
One spring, and his saddled back I press;
And ours is a common happiness.
'Tis the rapture of motion; a hurrying cloud
When the loosened winds are breathing loud;
A shaft from the painted Indian's bow;
A bird, — in the pride of speed we go."

Upon the proper education of the colt his entire usefulness depends. Whether the young life shall prove a source of blessing or of trouble to man will be decided by the manner in which he is trained. The education of horses is a question, therefore, of supreme importance to the public, in the discussion of which every one is interested. We approach it with the profound desire to give such, and only such, suggestions as shall quicken profitable thought, and result in giving to young horses a better preparation for man's service than they now, on the average, receive.

From the time the colt is born, he should be taught to

regard man, whom he is afterwards to serve, as his protector and friend. A human hand should first lift him gently to his feet, and direct his little mouth to the source of maternal nourishment. With the human touch he should thus early be made to associate caresses and a supply for all his wants. Instead of yells and oaths and kicks and rude blows, he should hear only gentle, loving tones from the attendant's mouth, and pettings from his kindly palm. He should be taught to expect and watch for man's entrance to the stall or paddock where he is kept, as a dog waits for the coming of the master, as the season of joy and happiness. His little deer-like limbs should be handled, and he be taught to yield them promptly and without fear to the master's touch. In short, every thing that loving ingenuity can devise should be done to impress upon his mind thus early in life that man is his natural protector and friend, between whom and him an intimate companionship has been ordained by beneficent Nature, which insures that he shall be protected and cherished while he serves. Ah, me! if colts could have such treatment, how few vicious horses we should see! and how much greater, in the aggregate, would be the happiness which life would bring to them and man! I say, *happiness;* for He who made all things hath given unto each creature, according to the class and order of its life, powers, and capacity for impressions, sufficient to make existence sweet, and fill the days of its life to overflowing with satisfactions. Especially is this true in respect to those animals

so endowed with high organizations and subtle forces, that they are able to apprehend and communicate pleasure; and to no class does this fact apply with greater force than to that one, the members of which are evidently designed by the Creator to be both servant and companion to man. Kindness to animals is, as I understand it, therefore, a duty, an obligation, resting on every one with the force of a moral injunction. Indeed, God so ranks it in his Holy Word, and gave it honorable place in his ancient legislation. The horse has a *heart*-claim upon us. The young colt is, in some sense, a member of the family, one of the owner's household, second in rank and dignity only to the children. So the Arab regards him. The beautiful young thing, with its shining coat and gazelle eyes and sprightly antics, so full of bounding but docile life, is literally his children's playmate. He shares their food, and often their sleeping-mat; and a blow dealt him is as promptly resented as if it had been dealt the oldest son, for whose service in peace, and safety in the hour of battle, the young thing is being raised.

When the colt is three weeks old, or thereabouts, he should be broken to the halter. And this should be done properly; for this is the first act which brings his will and strength in opposition to man's, and should be so done as to convey clearly and decidedly man's superiority, and his inability to contend with him. Early impressions in the case of animals, as truly as in the case of children, are lasting; and here and now, in

this the first step in educating the colt, the impression should be indelibly stamped upon his mind that man is his master. And this can and should be done without violence or cruel force. I will explain my method of treatment, and the reason therefor. Inquire, then, what the groom or educator of the colt proposes to do. This evidently: He proposes, in the first place, to teach the colt to follow after or by the side; that is, keep close to the one who is leading him by the halter. In the second place, he proposes to show the colt that he cannot successfully resist him; that he is not so strong as a man. This lesson once taught the colt, this impression once fairly embedded in his mind, he will never after, in all his life, forget it. He will live and die with the idea in his head that man is stronger than he. And this is a most valuable lesson for a colt to learn, and to learn early: it saves much after-labor and many risks. Well, then, to the method: I put a head-halter on, made of soft material, so that it will not cut into his tender skin, and so made that the cheek-pieces will not draw into his eyes when he pulls back or struggles; and when this is done quietly and gently, with pleasant words and kind caresses, I step out in front of him, and planting myself squarely, so that he shall not with all his efforts move me from my tracks, pull steadily on the halter, saying all the time, while the pressure on him is being increased, "Come, sir; come!" Sometimes the colt will come, yielding readily to the pressure; in which case pat him kindly, so as to make him feel that he has done

the right thing; and then step forward, and repeat the slight pressure and the kind command. In many cases I have found this enough; and the colt was "halter-broke" before you knew it, as one might say. But more often, as soon as the little fellow felt the pressure of the pull upon the halter, alarmed, and vexed too, perhaps, at this (as he regards it) rude interference with his liberty, he would "set back" upon the halter, resisting the pressure with all his strength. When this is the case, stand firm: simply *hold your own.* Don't twitch him, or "yank" him about, or drag him forward violently. *Let him pull.* Every moment is exhausting his strength, and increasing the pain he feels by reason of the halter-bands being drawn into him; and, after a few seconds of resistance, discouraged, and unable to endure the pain his own effort is causing him, he will give one great wrench, rear up, and plunge toward you. The pressure and the pain are remitted; and standing by your side, your arm over his moistened neck, and hand kindly patting him, he learns this sweet lesson, — *that nearness to the one that is leading him means absence of pain.* This once understood by the colt, he is *thoroughly halter-broke.* With this he has also got another idea, — *that you are stronger than he.* Had you tied him to a post, and let him "pull it out" as the phrase is, he would have got no such idea: the post or tree, not man, would have been his master. Or, had you waited until he was a year or even six months old, he would have been *stronger than you;* and he would have found

it out too. In his first match against man, man would have been beaten. He, not you, would be the master at the halter-exercise at least; and, while he might have followed you after a time, still you would have lost the opportunity of impressing him with his powerlessness when arrayed against man, which a wise educator will always seek to give to every colt he takes in hand. How unwise, viewed in this light, is that neglect to break colts to the halter even until they are three or four or even five years of age! "Children," says a thoughtful writer, "are made obedient before they are old enough to talk;" and colts, it might be added, are made obedient to man, if properly educated, long before they are old enough to use in harness. Now and then, the colt, if he be of high spirit and lusty, will struggle long, and make a real "fight over it;" and, to avoid accidents in case that he should reel and fall, select for the school-ground a spot of soft greensward, free from stones, in order that his falls may be harmless to him. Be sure also, in case of falling, that you keep his head from striking the ground heavily; which you can always do, because your hand is on the halter, by which it can be supported. This, in brief, is the manner in which I give my colts their first lesson in that course of education, which, when completed, has brought them to that degree of intelligence and docility at which they can be ridden without bridle or halter; driven without reins, hold-backs, or breeching-band; and find their joy in serving me, as I find mine in watching and caring for them.

When the foal is fifteen months old, I begin again to educate him. My object now is to get him thoroughly acquainted with the harness, and to teach him to stand quietly to be harnessed. To this end I direct my efforts. If the colt is high-mettled or timid, great care must be exercised, and patience also. Most colts, remember, are timid: they are born so. Animals that are not armed with claws and teeth, with which to protect themselves when attacked, are created by the all-wise Creator with the power to fly and the timid heart. The horse is constitutionally timid, then. It is natural for him to shrink from strange, new sights, and jump at sudden movements and loud noises. Remember this when you come to harness your colt, and have patience. This is the order of procedure in my stable: The first day, I simply put the saddle without the back-strap on, buckling up the belly-band loosely. This is done many times, increasing the pressure of the band until I have it quite as tight as is the custom. Then I take the neck-collar, and put that over his head, first permitting him to *smell* of it, and *touch it with his nose*, until he is entirely convinced that it is not calculated to *hurt* him. In like manner I continue adding part to part until the colt is fully harnessed. He is then allowed to stand with the harness on him until he has time to reflect upon the whole matter, and become accustomed to the unusual sensations by the pressure of the several parts of the harness against his sensitive skin; for we must remember that all this performance seems very queer

to him, and startling. When he has fully composed his mind, and settled down into the conviction that every thing is all right and as it should be with him, he is then *walked about*, the harness still being on, and brought back every few minutes to the spot where he is to be unharnessed and gentled, and taught to stand as long a time as it would naturally take to remove the harness from him. Straps are loosened, buckle-tongues started, saddle and collar eased; in short, every thing done that would be done in unharnessing, save actually removing the harness. After doing this several times, this standing still while being unharnessed has come to be, in his mind, a part of the programme, and he understands it, and assents to it as such. Once learned, in the case of an intelligent horse, *always learned;* for the horse is highly organized as to his memory, and in all his after-life he never will forget what you have so kindly taught him. This same process should be gone through with several times; indeed, in the case of a high-spirited, valuable colt, once or twice each day, for a week at least, because it is a most important part of his education. And you should remember that he is learning many lessons in one, including that greatest of all lessons a colt can learn; viz., to have confidence in, and yield his will to, man. Have great patience at this point of his education, even as a teacher must have when teaching an inattentive, and perhaps a dull child, the alphabet. Do not count the days you spend now: judge your success by the result, and pro-

ceed step by step, advancing no faster than your pupil's success justifies. Hurry here and now, and you will "make a nest of it," as the phrase is. During these *harness-exercises*, as they might be called, accustom the colt to pressure against the breast and shoulder by tying long cords into either side of the collar; and, by pulling gently, cause him to brace himself, as he will naturally do, against you. This gives him the idea of *drawing weight somewhere behind him;* and, by permitting him to pull you along, he will soon grow to feel that he can *pull any thing.* By this you will, as it were, teach him to draw a wagon promptly from the start, before you have ever hitched him ahead of one. A colt so educated will never "balk," or refuse to "go" at the word, if the weight behind him is not beyond his strength; because the signal to go, and the habit of pulling, have been already taught him. At this point, also, he should be taught to *back.* And here let me urge the trainer not to *pull* him backward bodily by main force, as I have seen trainers and gentlemen do. "*Backing*" is to a horse *walking backward*, — an unnatural and awkward way for him to move. He was not made to go that way, and does not understand it; and hence, very naturally, resists it. In order to understand how awkward and incomprehensible it is to him, put a stick into your child's mouth that is some eighteen months old, say, and pull the little thing backward for a few steps. I pray you not to take offence at this illustration: I seek only to impress upon you the

idea of patience and gentleness in handling one of the most sensitive, and at the same time one of the most abused, of God's creatures. Rightly managed, the colt can be taught to walk backward or side-wise, on all his feet or on his hind-feet only, or in any way possible for quadruped to move : nor will it require much time, either, to impart the lesson. In order to do this, when the bridle is on, step directly in front of him, and, with your hands grasping either rein, put a slight pressure upon his mouth, using the word "back," spoken clearly and distinctly (not loudly) at the same moment. He will naturally, even before he understands what you are at, move a little backward, in order to escape the slight pressure of the bit. This done, pat him and gentle him. Then grasp the lines, and do the same thing over again. He will soon associate the *sound* with the motion backward, and, even before the close of the first lesson, often, will readily comply with your request. Do not overdo the thing by keeping it up too long; for, by so doing, you may exasperate him, and every after-effort to teach him will be the signal for a new fight between you and him. The second or third day, buckle in the lines; and leading them through the breast-collar and breeching-straps, so that he cannot turn around and face you, take your position behind him, and repeat the lesson. In a few days your colt will *know* what you wish him to do, and, I warrant you, be *ready to do it.* The pressure on the bit, after he has once associated the word "back" with the motion required, should accompany the command, and

be instantly remitted on his compliance. No *steady pull* should be put upon him. What you are after is, not to so develop the muscles of your arms that you can pull or drag him backward, but to teach your colt to back at *the word of command;* and no colt is fit for market until he will back any reasonable weight with the lines lying loose at a word from the driver. To teach a young horse to *push back* a load is a longer process, because he does not know at first the proper position in which to put himself to perform this feat, nor are his back-muscles strong enough to do it; but, by patience and kindness, all horses can be taught "to throw themselves into the breeching" with a force and directness of propulsion sufficient to move great loads.

Perhaps I have "overrun my game," as hunters say of dogs that have left birds in the rear; and I will stop, and beat back until we find one branch of my topic which perchance should have been mentioned sooner. I refer to the "bitting-process" as it is generally termed.

It is astonishing how much nonsense and humbuggery trainers and grooms tolerate in connection with this point of horse-education. To see the bits that have been invented, and the "bitting-machines" that have been patented and sold, to serve this purpose, is enough to set the satirist on edge, and arouse the ire of the humane. The truth is, the only use of any "bitting-machine," if it is any thing more than a plain bar-bit in a bridle without blinkers or check-line, is to make money for some ignoramus, and torture the horse. The

philosophy of bitting horses, upon which these "bitting-machines" are founded, is a fraud and folly. There is no more need for them in a trainer's yard than there is in a nursery. I make no limitation or modification of this statement at all. Their true name is "fool's machine," and not "bitting-machine:" or more properly, if you wish to designate their use and result of it, call them "machines to spoil horses' mouths;" for this appellation precisely describes them. A man using one ought to be indicted before the common law of the country, which should at least be able to prevent such cruelty to animals. If any owner of a colt who reads this owns or uses one of these "bitting-machines," I urge him to burn it or bury it, as the most mischievous and hurtful thing that he can have about his stables. If I wished to make my colts "hogged-mouthed" and desperate *pullers*, I would use one of these "infernal machines," as I have no doubt the colts themselves call them, and as they deserve to be called by colts and men. I will show you how this plan of using these "*machines*" works.

To begin with, a colt's mouth is almost as tender as a babe's when teething. The tongue, gums, lips, and bars of the mouth, are as sensitive as the reader's. By this very sensibility to pain, Nature has guaranteed man against any trouble in reining him or controlling him. He yields readily and easily to the slightest pressure. Indeed, nothing is more noticeable than this provision of Nature, by which the animal best adapted to be

man's servant is easily made subservient to his will. Now, such a mouth — so tender and sensitive — must not be rudely dealt with. It is easily cut and lacerated; or, if not this, so indurated and hardened under pressure, that it loses its fine qualities, and grows comparatively insensible. It is very easy to so lacerate the gums, tongue, and lips of a colt's mouth, as to destroy or deaden the nerves that interpret pressure to the brain; and, indeed, to remove the sense of feeling entirely, or next thing to it. When this sensibility, wisely provided by Nature, is lost, the horse becomes almost unmanageable; because, the sense of feeling being removed, he does not know, nor has he any means of knowing, — seeing that the knowledge must reach him through the mouth, — what the driver wishes him to do. Perhaps one side only of the mouth becomes hardened, while the other remains sensitive; in which case the horse feels the pressure of the bit only on one side of the mouth, and is of all horses the most vexatious to drive, from no fault of his own, remember, but from his who "bitted" him. True it is, that it is necessary to *harden* the mouth of a colt somewhat, lest he should have what is called a "baby mouth;" that is, one too sensitive to the bit, so that he will not work up bravely against it as he should do when called upon to go at speed. But this *hardening* should be done slowly; or, rather, it should not be done at all by the trainer; but the colt *should do it himself*, as he will gradually do day by day in driving. He will learn to *take the bit* himself, and

do it according as he is able to do it, he himself being the judge. Now let us begin to *bit* a colt according to the machine method. The colt, never having been even broke to the halter, perhaps, is let out into a yard, the "machine" strapped on to his back, the bit of iron or steel jammed into his mouth, the check-rein adjusted, and the colt's head drawn suddenly up into the air, and the trainer stands one side. The colt, of course, struggles and rears and plunges. He becomes enraged, and "fights the bit:" foam drops from his lips; pretty soon it is stained with *streakings of blood.* The iron bit, you see, as he "fought it," has grated over the young teeth, cut into the tender tongue, and lacerated the gums and lips. I have *seen* all this done (it is no fancy sketch), — seen blood come in less than *two minutes* after the "bitting-machine" was adjusted. Now, what has been done? Several things, I reply. First, *unnecessary pain* has been caused an innocent and harmless creature: that alone is enough to condemn any "machine" ever invented. Secondly, the colt's mouth has been *spoiled* until the lacerated gums and lips and tongue can *heal.* Thirdly, the colt's temper has been soured, and no useful knowledge imparted. These truths are self-evident. But this is not all. The "machine," instead of being removed, *is left on;* the trainer goes to his work in the field, or to drive; and the colt is left to "fight it out." Now, examine the matter a little. What is the true position of things? This, I respond: The colt is in pain. His head is

drawn up to an unnatural height; his neck, pulled into an angle both awkward and painful, aches with exquisite suffering. To appreciate the agony the young thing endures, let some one take hold of your own head, and draw it up and backward as high and as far as the bone-structure and muscles will permit, and compel you to stand with it in that position even for five minutes. In this way you will get some idea of "bitting-machines," and the actual torture which colts experience while being "bitted" by them.

But the evil of this system is not yet fully stated. The colt, with his head drawn up and back, is left in the yard, as I have said, while the trainer goes to his work or to drive. Perhaps he stands an hour; perhaps five hours; very likely all day. For the first few minutes he strives to keep his head up, and the bit loose in his mouth, because it pains him; but pretty soon the muscles of his neck begin to ache. They were never made to hold up the head in that style, and are actually unable to do it for any considerable length of time. Soon the head sags: the pain in the overtasked muscles of the neck is greater even than that caused by the pressure of the bit. It is, you see, with the colt, a choice between two pains. Little by little, the head droops; heavier and heavier the weight of it is laid upon the bit; and, in the course of an hour or two, the colt stands weary and stolid, the weight of his head and neck laid solidly down upon the bit. The colt is being *taught*, you see, to "take the bit" with a ven-

geance. He is actually being *educated* to "hog on the bit," and be a puller. No method of bitting can be more vicious and villanous than this, inflicting, as it does, torture on the innocent victim, and, in not a few cases, actually putting the animal beyond the reach of future betterment.

The true way to bit a colt is, not to bit him at all; that is, let him bit himself. When my colts are one year old, I begin to teach them to hold a bit in their mouth. The bit is of pine, some half-inch in diameter, and five inches in length. This piece of soft wood is held in the mouth by a cord tied to either end, and passing over the head, back of the ears. The colt loves to have this in his mouth, because it enables him to bring forward the teething-process. He will bite it, and work it over in his mouth, and enjoy it hugely. He will welcome it, and will actually reach out and open his mouth for it as a trained horse will for the bit. After a few days you can tie strings, making miniature reins to this bit, and teach the colt the proper use of it. When this is done, he is ready for the regular steel bit. Put your bridle on with a leather bit, large and pliant; throw your check-line, if your bridle has one attached, into the pig-sty; get into your wagon, and drive off. This is all the "bitting" a colt needs. Treated in this way, he will have a lively, yielding, sensational mouth. He will take the bit bravely when working up to his speed, but yield readily to the driver's will. A horse bitted in this sensible way can be driven

a forty-clip with the lines held in one hand, or be lifted over a five-barred gate with the strength of a single wrist. If you don't believe it, try it, and see. Many people prefer to put the colt beside an older horse, and let him take the first dozen drives on the road in double harness: and to this method I see no serious objection; although, for myself, I do not favor it. My colts are all taught to go single first, and thoroughly taught at that; and I hold that this is the better way. But, if you prefer the other method, be sure that the horse beside which the colt is hitched is in every respect reliable and well instructed; because the colt will catch at, and be sure to imitate, any vice or fault in the older horse. Do not select a lazy, slow-moving horse for the service, but rather a quick-moving animal, lively, but amiable. A colt naturally starts quickly, and moves sprightly; and a slow-starting, slow-moving brute by his side will irritate him. The older horse should be quick enough to start the load himself, and keep it moving, so that the colt shall not be unduly fretted and chafed: if not, the younger horse has to start and draw the whole weight; and in that case his temper will get up, and you will have a fracas. I know that some breakers love to get into a fight with a colt, and "take the starch out of him;" but this is villanous conduct, and has neither necessity nor reason to justify it. The true way is to avoid these "fights" with the animal you are teaching; and, by the exercise of patience and kindness, give him time to understand what is wanted of him, and make him love

to do it. Remember that some colts are slow-witted, and easily confused; and a single blow or yell, on the part of the trainer, may throw him into a state of temporary fear or exasperation, which totally unfits him to understand even the simplest command. And here let me urge upon the reader who has a colt, or colts, to teach, that, if he has the habit of speaking sharply and loudly, he correct himself of it at once. Colts are timid, high-spirited things, if they are worth any thing; and he who manages them should be of quiet habits, and have a low, pleasant-toned voice. The trainer that yells stands in the same category as the driver in a public race who screams and whoops like a Comanche Indian when coming down the home-stretch: the one should be banished the track, and the other turned out of the gentleman's stables. But to return. My method of educating a colt to the harness and wagon is to educate him singly, by himself; and this education should begin very early. When the colt is twelve or fourteen months old, begin to put the harness on him. In a few weeks he is accustomed to it, and ready for the shafts. But, in doing this, do not be in a hurry Give the youngster time to get thoroughly acquainted with every strap and buckle, as it were. Let him *see* every thing, and *smell* every thing. The sense of sight, smell, and touch, is the great avenue of knowledge to the horse, especially the last two. The ear and eye give the alarm. These two organs stand, as it were, on picket for the animal's safety. But, if your horse is

frightened at any thing, let him smell and touch it, and he will fear no longer.

If your colt is afraid of your harness as it comes rustling out of the harness-room, let him touch it with his nose, and smell of it a few times, and he will soon understand that it will not hurt him. If he is inclined to kick or jump if the breeching-band or any strap hits his hams or legs, by gently rubbing them against the sensitive places he will soon become indifferent to them. By the time the colt is two years of age, or even less, he should be educated to go between the shafts, either forward or backward, and be thoroughly familiar with the harness and vehicle and ordinary road-service. Instructed at this early age, he will never forget the lessons of obedience and submission taught, but be ready at any future time to be put to work, without any considerable trouble to the owner or purchaser.

In case your colt is a vicious one, I have no advice to give, unless it be to kill him. There is no need that a vicious colt should ever be raised; and I hold that it is a sin against the beneficent order of nature for a man to raise an animal whose very existence imperils other existences. The public would regard a man insane who spent time and money in stocking his garden-plot with a superior kind of thorns: they would say that it was an abuse of nature, and a sinful waste of opportunity. What shall we say, then, to the man who goes to work, year after year, and

deliberately fills his stalls with vicious colts? Logically, the same answer would be returned; and this is the way that every right-minded breeder regards it. Neither beauty nor speed in a horse can make amends for a vicious temper; because a vicious temper in a horse imperils human life, and whatever does this is by that fact condemned. And so I say, that no vicious colt is worth the breaking. He is unfit for the purposes of civilization. He should be treated as any other ferocious and dangerous animal should be treated, — killed at sight. But some colts, while they are not actually vicious, are not truly amiable. They represent an intermediate class, lying between the really docile and the ungovernable; and are, hence, objects of interest to all owners and trainers. It is doubtful if any general rule or rules can be made to apply to this class of animals, because their faults and vices are not the same, but individual, differing in different cases. Still I will glance at some of the more prominent failings or vices of this class of animals, and suggest, so far as one can without a personal knowledge of each subject, the proper method of treatment.

First of all, we must observe this principle, — that punishment alone can never eradicate viciousness, especially if the subject of it has a high-spirited organization. Whipping alone never reformed a bad child. The lash never makes a vicious colt amiable. It may change the mode or the time of its manifestation; but the inherent ugliness will, seizing some favorable moment, break

forth. This principle being borne in mind by the trainer, if he be a man of judgment, will supply him with a good guide in his educational efforts. If the whip is ever used, — and I think it can be with profit at times, — let the blow be sudden and sharp, and *rarely repeated.* Beating and pummelling a colt never does good, and rarely, if ever, fails to work lasting mischief. One of the meanest tricks that a colt can fall into is that of running backwards, which the English call "jibbing." Your colt is harnessed, and safely led out of the carriage-house or yard. You mount the seat, and tell him to go ahead. This he refuses to do. He looks round at you with deliberate wilfulness in his eye, as much as to say, "I rather think I shall do about as I'm a mind to in this business." You lift the whip from the socket, tap him gently over the rump, and tell him to go ahead. Instead of this, he begins to go backward. I have seen a man work two hours in a vain endeavor to make his colt go forward. The colt was by no means vicious; and this habit of running backward, or jibbing, was the only bad one that he had. But this threatened to mar, if not utterly thwart, the trainer's endeavor. Day after day, the colt was tried. He was pulled forward by main strength; the whip was used judiciously; he was coaxed; he was threatened: but it was literally no go. At last the trainer harnessed him into a common road-sulky, and led him out into a large field free from all obstruction; and placing himself behind the sulky, with the reins held tightly in his hands, he gave the signal

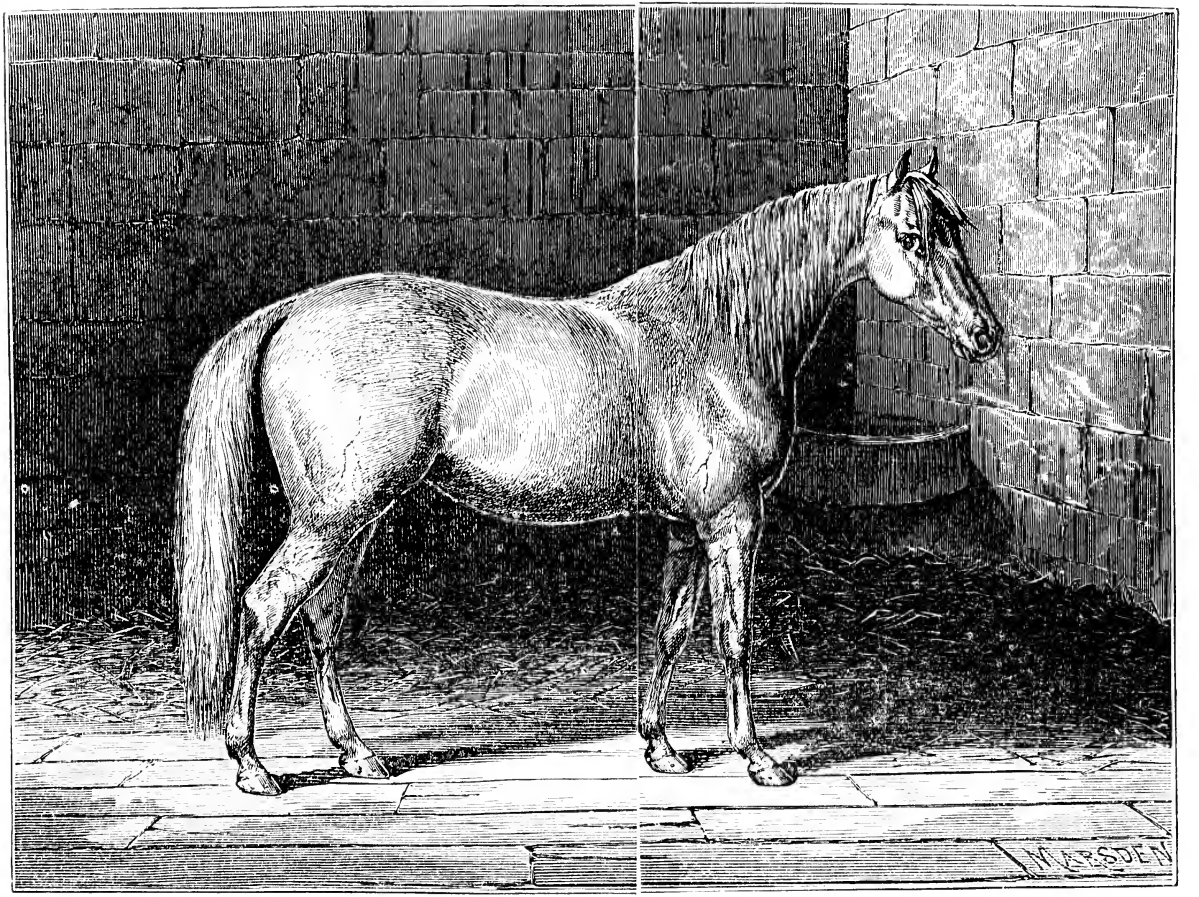
for the colt to move. Move he did, but backward, not forward. When the colt began to run backward, the trainer, instead of seeking to check him, allowed him the fullest freedom of action, simply keeping one line a little tauter than the other, so that the colt should run backward, not in a straight line, but in a curve. When the circle was nearly complete, the colt was ready to stop, his eyes filled with the look of intense and wilful satisfaction. But his trainer did not propose to let him stop. He put a strong and steady pressure upon the bit, compelling the colt, against his will, to keep the backward movement. This had the desired effect. By the time the colt had been spun rapidly twice around that circle, he had had enough of it. He was literally giddy; so much so, that he could barely stand. This cured him: he had been caught in his own trap. The trainer mounted the seat, patted him on the haunches, and called on him pleasantly to go ahead. From that day he gave no trouble: he was completely cured. I have known this tried in many cases; and each time the result was satisfactory.

Another mean habit is that of lying down in the harness. Some colts will lie down almost as soon as you have them harnessed. Sometimes a blow from the whip, delivered low down along the side, quick and sharp, will bring them up with a spring. If one or two blows do not answer, the whip is of no use: you will only torture and scar your colt needlessly. The better way is to "beat him at his own trade," as the saying is. When

he lies down, get upon his head and neck, and make him stay there. After five or ten minutes, he will begin to grow uneasy. He won't know quite what to make of it. Soon he will feel the uncomfortableness of his position. He will make an effort to rise. Now is your time: keep him down. Down with his head flat to the ground, and hold it there. It is no boy's play; but you can do it if you are determined, and reasonably strong. Only don't let the job out to a small boy; for the job is a big one at times, and needs a quick eye, a stout hand, and a strong back. Watch the colt, and don't let him up as long as he is rebellious, if you hold him there all day, and the following night at that! Let him sweat and struggle: he is learning two valuable lessons, — the first of which is, that it does not pay to lie down in the harness; and the second is, that man is stronger than he. This latter point includes almost every thing in relation to the training of a certain class of horses. Until they are taught this idea, they are utterly unmanageable: you can make no progress in their education. But let them once learn that they are not the masters, but are as nothing in the hand of the trainer, and the battle is won: all that is needed follows naturally and easily. Now, there is no position which gives man such absolute command and mastery over a colt as when he has his knees on his neck, and his hands gripped into the bridle-pieces. Thus situated, man is absolutely "master of the situation;" and I have often thought that it was a very good idea to have a colt of rather vicious temper lie

down once, in order that he might learn how powerless he is in the hands of man. When a colt gives up, the man at his head will easily perceive it. The hot blaze and mad glitter will leave the eye; the muscles will relax their tension; the neck will become limp; and the whole body, losing its rigidity, will lie along the earth as if it had no thought of rising, and would never rise. This is the stage of exhaustion and submission. The colt's rampant spirit is cowed, and his pride humbled. His conceit is taken out of him. He has been beaten by his own weapons, and *knows it.* He will never trouble you again in that way. As to the time it takes to bring a colt to this conviction, there is no precise limit. Some colts will "give it up" in twenty minutes; some in sixty; and I have known colts hold out for *three hours.* But, whether it takes longer or shorter, carry the thing through. Believe me, you cannot spend your time better.

Another fault, or rather habit, — for it is often only the result of habit, and no result or proof of viciousness, — is kicking. We should remember that a colt kicks *naturally;* that is, he does it in self-defence, and also in the way of play. It is, as it were, his birthright, by which he expresses his physical spirits, and defends himself. The fact is, no colt should ever be put between the shaft without a *kicking-strap;* that is, a strap buckled to either shaft, and passed over the haunches in such a way as to make it impossible for him to get his heels over the cross-tree. This is the only *safe* way to pursue. Gen-



"THE WHITE MARE."—BRED AND OWNED BY HON. GEO. B. LORING.—SEE PAGE 384.

erally speaking, a slight twitch on the reins, just as he is on the point of "lifting," will check the effort: but it needs a quick eye and hand to catch the colt soon enough to keep his heels out of the dashboard; and not over two in ten men would be sure to do it. But, by using the kicking-strap, all danger and risk are averted; and therefore I invariably insist on it in educating my colts. After two or three attempts to "*lift*," the youngster finds he cannot; and is thereby, as the Irishman said, "cured of the disease before he had it." In the case of colts, as of men, an "ounce of prevention is worth a pound of cure."

As to the matter of "balking," no general direction can be given, or rule established. If the education of the colt has been conducted in accordance with the principles I have in previous pages laid down, he will not *balk*. Balking on the part of colts is, for the most part, the result of the trainer's ignorance or passion. Yelling and whipping on the part of the trainer or driver, over-loading, sore shoulders, or ill-fitting collars, — these are the causes that make horses balk. But if you have a horse or colt that balks, while I cannot, without a personal knowledge of the subject, tell you what to do, I can tell you what *not* to do, — *never whip*. If he won't go, let him stand still and think it over. He will very often think better of it, and after a few moments' reflection, and a few tosses of his head, go on of his own accord. Or, if this does not answer, get out of the wagon and pat him, and talk to him kindly. A

horse is very susceptible to kindness; and I have known more than one quite vicious horse gentled into good behavior by a few pats from a lady's gloved hand on the moist neck and veined muzzle. Sometimes it is well to loosen a strap or start a buckle. I have known the mere act of unchecking and rechecking the animal answer the purpose. It took his attention off in another direction, you see, changed the current of his thought, and broke up his purpose and determination to resist. For this same reason, an apple, or a bunch of grass from the roadside, or a handful of oats, or a few kernels of corn, will often accomplish what an hour of beating could never effect. The truth is, a man must govern himself before he can hope to govern lower animals. A man flushed with passion, his brain charged with heated blood, and eyes blazing with rage, is not in a condition to think clearly; and it is just this *thinking clearly* that is, above all else, needed in directing and controlling horses. Hence it is, that contact with horses, and an actual experience in teaching them, is one of the finest disciplines a man can have. He grows to love the colt he is teaching; and no nature is utterly depraved in which is going on the exercise of affection, no matter how humble the object of it may be. His employment makes it necessary for him to think; and this keeps intellect, which might otherwise have no development, alive. The language of the stable is not, as many pious and ignorant people imagine, all slang. Care and anxiety are felt in the groom's room, and con-

sultations held upon the issue of which the health and safety of valuable property depend. Plans are formed, and methods of procedure adopted, upon which fame, and vast sums of money, come and go. Faults of nature, and errors of education and practice, are corrected; and the trainer discovers, that, in schooling God's creatures, he is being schooled himself. Thus, as in all other branches of honorable industry, the horseman discovers that he is the point from which one current goes forth, and another enters in. He bestows, and he receives; he educates, and is educated; and the life which so many thoughtless people despise, closes, as in the case of Hiram Woodruff, — the upright in heart and act, — with honor, and a fame which can fail only when kindness toward animals, and integrity among men, are regarded as of no account.

It is, as I have said, impossible for a writer to lay down rules adequate for the trainer's guidance and direction in the management of vicious or irritable colts; for very likely no two cases require the same treatment. These points may, however, be made: Keep your temper. No matter how provoked: put a severe curb upon the rising of passion. A cool head, and calm and steady nerves, with a quick eye, will go far towards success in conflicts with even the most irritating animals. Moreover, never forget that the law of kindness is stronger in its influence on the animal creation than the law of force. Remember this also: Do not make much noise when having a contest with a colt. Say little to

him, and nothing to any one else. Do not be shouting, "Get up!" "Whoa!" "Look out there!" and the like. Silence is a great virtue in a horse-trainer. A low-voiced groom is worth his weight in gold about the stables. A horse cannot understand sounds like a human being; and the less said to him, for the most part, the better. A few sounds, of course, are necessary; the word "whoa" being one of these. This word should mean *stop:* it should never mean any thing else in the colt's ears. It should be pronounced in a quick, sharp, imperative tone. It should never be drawled out or prolonged, as if there were a dozen *a*'s, instead of one, after the *o*, as is often the case. *Whoa* means *stop*, as I have said. When a colt hears it, he should stop, and stop in his tracks too. It is not a word to be frequently used, therefore, but to be saved for emergencies; as when some strap or bolt gives way, a bit parts in the mouth, or an upset occurs. At such a time you can say "*Whoa!*" and if it has always meant *stop* to your horse, if he was broken to so understand it when young, he will so understand it then, and stop; thereby saving, perhaps, your limbs, or even life. The common fault is to use the word to steady the horse when speeding, or to slow him up. For this purpose take some other word or words; as, "Steady, boy; steady!" but let the word "whoa" mean but one thing to your horse; viz., to stop, and stop instantly. The horse of ordinary intelligence can be made to understand this with very little trouble, and in less than a dozen lessons. I have seen horses trained

in less than a week's time, so that, when streaming round the exercise-lot at a swinging gait, they would stop at the word sent forth from the mouth of the trainer, so quickly as to actually throw themselves upon their haunches. The method is simple. Put your bridle on to your colt, buckle in a pair of long lines, and, taking position in the rear, start him along. After he has taken a few steps, say "Whoa!" and at the same time give him a slight twitch on the bit sufficient to cause him to stop. Do not be rude or harsh, but gentle and firm. Start him now again, and repeat the sound and the movement of the hand. The colt will soon catch the idea, and learn what the sound means. Then you can go on, and teach him that it not only means *stop*, but that it means to stop *instantly*. A few days of this simple treatment will suffice to teach him thoroughly the lesson, which, when well learned, he never forgets, and the real value of which can scarcely be overestimated. If the colt is worth five hundred dollars when broken in the ordinary way, he is certainly worth six hundred when instructed fully in the manner I have set forth. Any sensible man, in purchasing a horse for family service or for fast driving on the road, will gladly pay a hundred dollars extra if the breeder can show to him that the colt will stop short in his tracks at the word; for he sees, that, amid even the average risks and hazards of driving, such a power over the animal may prove of supreme importance.

Next to this understanding, on the part of the colt,

of the significance of the word "whoa," is indifference to pressure upon the hams and legs from behind. So important is this, that I hold that the education of no colt is really completed until he can be driven on ordinary roads without breeching or hold-backs. He should be taught to be utterly fearless and indifferent to the wagon coming suddenly upon him from behind. So far as the human mind may predict, my own life has been certainly saved once, because the horses I was driving, when the pole snapped half way down a mountain-side, had been taught these two supreme virtues, — to stop at the word "whoa," and to hold the wagon back with their haunches. It is astonishing to me that two habits of obedience so essential as these, and so easily inculcated, should not be regarded as actually indispensable. I have pointed out the process of teaching a colt to stop at the word. I will now suggest my method of teaching horses not to fear when the wagon comes suddenly against them. I take the horse, and, backing him between the shafts, continue to back him slowly and easily until his hams come in contact with the whiffletree. He may start at first; but, after a few trials, he becomes absolutely indifferent to it. Then, calling the groom to the head of the horse, I station myself behind the wagon or carriage, and, speaking kindly and soothingly to the horse, push it slowly forward until it comes against him. All this is done quietly, remember, and so gently as neither to hurt nor alarm the animal. After a few trials, the

horse becomes accustomed to it, and will actually brace himself against your pressure. This is what you have been after. He has caught the idea, and will henceforth enter heartily into your plan. In a few days he will even bear pain in resisting your efforts, and not flinch, and adjust himself in such a way as to receive the pressure at the best angle of resistance. You can now hitch him into your wagon, and leave the breeching and hold-backs at home. After two months of training, I have driven a colt, which was not at all amiable by nature, for miles on a country-road, where the hills, while they were not long, were steep, with nothing whatever to assist him in holding back the wagon. While I would not advise any to pursue this course, I still declare my belief that the majority of colts could be easily trained to stand this test; and I urge all trainers to so educate the animals in their charge, that the breaking of a single strap, the snapping of a bolt, or even the falling-off of a nut, shall not endanger the lives of those who are riding trustingly behind.

I have now gone over the matter of horse-education so far as is necessary to fit him for the average public use. We began with him when he stood at his mother's side, and, by gradual processes of instruction, brought him up through the several grades of knowledge of and familiarity with men and things, until he has become serviceable to man. He who brings a colt up in this way is a public benefactor. It may be, that, so

far as he is concerned, selfishness supplied the actual motive at every stage of the proceeding; but, nevertheless, selfishness cannot appropriate the result. The motive was not generous; but the result is noble. He has ministered to the enjoyment of many; he has added to the possibilities of social intercourse and domestic happiness. He will be paid for his labor in dollars; but the profit which he has brought to the world cannot be estimated in currency. Commerce will add another sail to her squadron, the rail-car have a heavier freight, the social room a fuller company, and the house of God a larger audience, because of the animal that he has so successfully raised and trained for human use.

We will now pass on to consider the higher education of the horse: by which I mean those processes and methods of proceeding by which the more characteristic traits of his nature, chiefest among which is speed, are brought forward, under wise management, to perfection. Let us, therefore, inquire how a colt should be treated in order to develop in him the highest degree of speed. We will take an animal at two years of age, let us say, and inquire into the best method of cultivating the faculty and power of rapid motion.

The first thing to attend to, be it observed by all, is the *lungs*. Lung-power is the best kind of power a horse can possibly have, because it alone can make other kinds of power of avail. Muscular power is very desirable; but muscles can never bring a horse to the wire in time, unless his lungs are good. Nervous force

is excellent; but no amount of vital energy will hold a horse up through the wear and tear of a four-mile race. A perfect bone-structure is admirable; but what are bones, if the breathing-apparatus is inadequate? The first point, therefore, I say, that a breeder or owner of a likely colt should consider, is this matter of lung-development. The great question with him should be, "How can I expand and enlarge his lungs?" Still, although every reader will see at a glance the vital significance of this point, it is, I presume, a branch of horse-culture to which less attention is paid than any other. You can get books by the score on the "Foot," on the "Bone-Structure," on "Muscular Development," on almost every possible subject, relating to the horse, about which a book could be made, or a discussion started; but when you go to the bookseller's to inquire for books telling you how to build up the *lung-power* of a horse, you can find no such book for sale! Our limits do not allow us to treat of this most important subject at length; and we can only hope to call attention to it, and make, in a plain, simple way, a few suggestions which may prove of value to the breeder and trainer.

To begin with, then, let it be remarked that colts need a great deal of exercise. By nature they were made for rapid movement. Like young birds, they develop in motion. The number of miles a colt of high breeding, and in good condition, will go when at pasture each day, is something surprising. I will not mention my estimate, because no one would believe it

to be correct: and I only ask you to watch a colt twenty-four hours, and make your own estimate; and, if you are not astonished, I shall be. Now, no sensible man will turn a colt of fine promise loose in the pasture after the second year; and I do not after the first. A valuable colt is too valuable to risk in that foolish manner, especially if he is a horse-colt. He should be kept in a large, roomy stall, where he can be attended to and trained day by day. But do not forget his need of *daily exercise.* Do not think that a box-stall will suffice. You might as well teach an eaglet to fly in a large cage as to give the needed discipline to a colt's legs, heart, and lungs in a box-stall. Many most promising youngsters are fatally checked in the development of their powers by lack of needed exercise in their second and third years. I hold that a colt needs a great deal of exercise; not to the halter, which is good for nothing but to sweat out a lazy groom, but sharp, quick exercise, in the taking of which every muscle is brought into play, every joint tested, and every vein, however small, swelled taut with rapid blood, as is the case when allowed the liberty of hill and plain, and to follow the promptings of nature. Ah, me! how full of bounding life the youngsters are, when in a drove of twenty, heads uplifted and tails erect, their long hair streaming straight out behind, they charge in thundering column across the shaking field! See how they tear along with hoofs that spurn the plain, with changeful gait, and action free

and swift as a swallow's! See that sorrel trot! Look at his stride! How he opens out! Ha! did you see the chestnut catch his step? Good heavens! how that brown one runs! Ho! here, boys; here! Now look and see them come strung out in line, heads towards us, ears pricked, and eyes on fire! *Hi, there! hi, there!* Now see them swoop to the left, and go tearing away like mad, muzzles straight out, and ears laid back, until they pass the ridge, and the valley catches them from our sight! Circus! — there never was such a circus as that! It's enough to stir the blood in the veins of a deacon!

It is the exercise-lot, and the exercise-lot alone, that can take the place and make good the absence of nature's liberty. In it the colt can run and jump and race, and double this way and that, and check himself, as only a colt can when in full career, to his heart's content. Every owner of a colt should have an exercise-lot. It costs little to make one, and will pay for itself fifty times over in two years. Let it be from ten to fifteen rods long, and from eight to ten rods wide. The ground should be level, ploughed, and raked free of cobbles. It should be fenced with boards not wider than two inches apart, and at least seven feet in height. The posts should be on the outer side, so that the inside may be flush, with no projection against which the colt can strike. Take a shovel, and heave up a slight bank around the inner side, like to what the ring-master of the circus does, that his horses may get a foot-support as they circle round. Now build you a raised platform

at one end of the ground, outside the fence, for your visitors to occupy during the exhibition, and your job is done. When you have such an exercise-ground on your place, you have added a most valuable possession to your property. If you have colts to sell, such an exercise-ground is indispensable. It will enable you to get at least twenty per cent more for your stock, and sell them several years sooner, because purchasers in search of likely young horses can see, the first time a colt goes around the yard, about what he is. His action, which could in no other way be shown so well, is seen; and a bid is at once made on him. With good stock, and a good exercise-lot in which to exhibit them, a breeder's stable will never be choked up with unsold stuff; nor will his purse ever be empty.

But the exercise-ground has a higher use than this. In every stable are several colts *too good to sell* as yearlings. Their pedigree and promise give them a speculative and prospective value so great, that the breeder or owner cannot afford to sell them until they are more developed; because the prospect is, that, when developed, they will reach a much more remunerative figure. Now, these are the colts for which the exercise-lot is peculiarly adapted: indeed, it is indispensable to their welfare. They are too valuable to turn out with the drove; they are too valuable to sell: wisdom says, "Keep them a while longer, and develop them." But this development can only come by exercise, and that kind and class of exercise which can be had nowhere

save in the exercise-lot. The reason is, that in no other place can they get that *rapidity* and *variety* of movement absolutely indispensable to their growth, health, and vigor. The first thing, as I have said, to which to pay attention, is the development of the lungs. The lungs must, in the first place, be built up in *size.* The larger the bellows, the stronger the blast. *Large* lungs — as large as nature can be made to grow — is what every horse kept for speed wants. Secondly, the lungs must be of fine texture. The lung-*substance* must be of excellent quality, — elastic and tough; able to bear the strain of inflation and the shock of collapse without pain or injury when the horse, on a hot, muggy day, comes struggling to the judges' stand with the driver's voice in his ear, and the driver's whip laid at every stride across his rump. It is *lungs* that win on such a day and race. Bone-structure won't do it; muscles won't do it; nervous energy won't do it: lungs, and lungs alone, win in such contests. If you would realize the force of this, try a short race yourself. Start off and run forty or sixty rods even at your sharpest jump: very likely, before you have gone half that distance, you will begin to discover where your lungs lie, and the value of *wind.* Now, what was it that gave out, and made you stop so suddenly? "Pain in my side, shortness of breath," you reply. Exactly. Your leg-bones were all right; your feet didn't pain you; your muscles could have carried you forward a mile; your determination was strong enough: but

your wind gave out. You see now the *relation of lungs to speed.* Now, reader, I put the question to you, If you have a fine colt, what are you striving to do with him? Ten to one your anxiety is to build up his bone-substance, develop his muscles, restrain his nervousness, educate him to go squarely, keep his blood in a good condition. All these points you have paid the closest attention to; but the *lungs* — the most essential of all organs, able to contribute most to your success in the hour of trial — you have left to take care of themselves. "What can I do?" you inquire. This, in the first place, I reply: See that your horse or colt has plenty of pure, fresh, *unbreathed* air. A well-ventilated stable, where the horse has plenty of air that no other animal's breath has tainted, is the first essential. Foul air means foul blood; and foul blood means diseased lung-substance. If your colt's blood is diseased, his lungs are being built up with diseased substance, like as when a wall is built of rotten bricks. If, now, your colt is in good health, and has a stall well ventilated, and is exercised to the halter every day, you think all is being done that need be or can be; but you are greatly mistaken. Such treatment will keep him in good health, and an average lung-growth: but for speed you must have more than this; you need *extraordinary* lung-development. And how, pray, can we obtain this *extraordinary* lung-development? In this way, and in this way alone: *By putting the colt at least two or three times each week to the top of his speed in the exercise-lot.* Not until his

blood is heated somewhat, and lungs and heart have begun to work under pressure, is either the blood or wind sent fast and forcefully enough into and through the venous system of the lungs to fairly expand them. The lung-substance, as you know, is full of veins, — minute blood-ducts; and the action of the heart, when the colt is merely jogged about, is not strong and rapid enough to send the blood through these in the way in which it must be sent in order to strengthen and build them up. Moreover, in order to enlarge and develop the lungs, they must be distended, — distended *thoroughly*, to the extremity of every little air-passage: and, to do this, the inhalation on the part of the colt must be sudden and strong; which, of course, cannot be unless the colt is put through a course of sharp exercise. You will observe that my plan is only Nature's plan, the location of the exercise being changed. Nature exercises her colts in the field: she sends them tearing through bushes, and jumping brooks and bowlders, and racing over hillocks; nor will she let them halt until their necks are moist, their nostrils distended to their utmost capacity, and their flanks all a-quiver. I accept the hint; and standing in the centre of the exercise-lot, whip in hand, my groom sends my favorite colt around time and again, time and again, — now at a trot, now at his keenest jump, — until his nostrils show their red, his neck moistens, and his ribs stand out to sight as lifted by every inflation of the lung. This, remember, is done day by day, month in and out, the year round. It is

this steady, persisted-in exercise touching any organ that gives to it, in the end, its highest possible development. Those who think that they can develop a horse's wind in two or three months are greatly mistaken. Lungs, like ships, are not built in a day: they cannot be *put into* a horse a month before the expected race. They must *be grown up in the horse*, beginning at the day he is able to trot by the dam's side; and they can only be *grown* in the manner I have pointed out.

In conjunction with the exercise-lot, and alternating with it, if convenient, comes jogging on the road or around the track. Some people say, "Never drive nor harness a colt before he is five years old." This is sheer nonsense. The natural state is not the best state, necessarily, to an animal so highly organized as the horse. Dio Lewis will take a boy and train him, so that, at twelve years of age, he will lift twice as much as any Indian lad of that age who ever lived. For the purposes of nature, Nature is perfect in her educational processes; but, for the purposes of man, man is the better disciplinarian. A colt, if he be well formed and of average size, should be driven from five to ten miles to a light hitch-up twice a week at least, and be allowed to "strip out" once or twice every drive for a quarter of a mile, too, at that. Colts are made to *go;* and *going* does not hurt them, as any one can see who watches them in the pasture. It does not hurt a colt to "*puff*" and "*sweat;*" but, on the other hand, this swift and hot lung-and-heart action is just what his system

needs for its development. I would not say a word to encourage any to *overdrive* colts; for I hold that such conduct is criminal: but I believe, that, where one colt is crippled by over-exercise, fifty in the country are being crippled by constrained idleness. Give your colt, friend, plenty of oats and hay and pure water, and fresh air in his stall, and plenty of exercise in the exercise-lot and on the road, and you will have an animal, when he is matured, able to go fast and go far, and pull weight, without giving out, either: and if you should ever enter him in competition with another horse of equal speed by nature, but educated in the old approved style of being babied in a box-stall until he was put into actual training, you will see your horse trotting under the wire with ears pricked, and unlabored action; while your rival's nag is straining and blowing, in vain but frantic effort, half way down the stretch toward the distance-post. Whatever else you neglect in the education and training of your colt, reader, do not neglect the development of his lungs. No matter what theory of development you adopt: have a theory; for this implies thought on your part touching the matter; and the trouble now is, very likely, that you have never given any thought to it at all.

Next to the development of lung-power, stands, as I judge, in importance, the development of muscular power; and to this we will now turn our attention.

The muscles which need especial development are those of the haunches, or thighs, and *back*. The former

do not suffer from lack of treatment; but the latter do. It is not leg-power so much as back-power a horse needs in order to pull weight and project himself rapidly through the air. The muscles that are located over the loins, and run forward like great pulleys along either side of the spinal column, as you can see if you will watch a horse in action, are the ones relied on by nature to do much of the work required. Hence a long-backed horse must be exceedingly strong in the muscular formation at these points, or he is sure to give out when the tug comes. How to strengthen the muscles of the back and loins is, therefore, a question worthy of the breeder's and trainer's closest attention. In the human system this is done by lifting weights, and climbing hills, and carrying burdens. Every one knows what enormous burdens the porters of the East will walk off under with ease, — burdens which an American could barely lift, much less shoulder. Well, how do they get this power? The answer is found in their habit of life and labor. From boyhood they are porters, weight-carriers. Every day adds a pound to their weight-carrying capacity; and thus nature is developed to an extent which seems marvellous to us, unused to such exercise and labor. Well, muscles and bones are the same everywhere, — the same in the horse as in the man; and if man, by certain practice, and exercise at weight-carrying, can develop the muscles of his back and loins so that his natural capacity can be more than doubled, why can we not develop the back and loin power of

our colts in like manner, and to the same extent? I hold, therefore, that the muscles of a colt's back and loins can be easily and greatly developed by the imposition of weight; beginning, say, when he is two years of age, and continuing the practice until maturity. Many horses naturally somewhat weak at these points could be brought, in a few years, to be above the average capacity by a judicious treatment of weighting. So far as I have experimented in this direction, the result has been eminently successful,— precisely what one would expect, from the circumstances of the case, it would be. This I know, that, even in a few months, the muscles of the back and loins can be enlarged and brought out, so that the improvement in the steadiness of the animal's gait, and his power to stride, are perceptible even to the driver's eye.

Many horses "tangle up," and go to pieces, because the muscles of the back are too weak to put the necessary control upon the framework and the legs. Every horse "breaks" in the back before he "breaks" in the leg; that is, the unsteadiness of motion — which, when it has passed a certain limit, is communicated to his legs, causing him to change his gait from a trot into a run, in order to save his balance — begins in the back. As long as a horse can keep his back-bone in a straight line, he is all right. His loss of control over himself springs from a muscular weakness at that point. One reason why a horse should never be pulled so that he is doubled up, is because, when so doubled up, he cannot

keep the spinal column — which is to the framework of the horse what the keel is to the framework of a ship — straight. Some say, indeed most say, when driving a race, watch your horse's head for the first signs of unsteadiness. Hiram Woodruff said, that, in the action of the head, the driver could see the first premonitions of a break. Against such authority I would not set any opinion of my own, save in the way of suggestion. But while Woodruff may be right, and undoubtedly is right, in many, perhaps the majority of cases, I am, on the other hand, confident, that, in *some* horses, the signs of the coming break can be quickest perceived in the action of the spinal column. My habit is to watch the horse's back: so long as that is straight, well-steadied, the action of the back-muscles regular and in a straight line, I keep sending the horse along. Only when a slight quiver or twist, a kind of kinking-up or swaying motion, is seen in the back, do I take him more firmly in hand, and steady him until he has time to straighten himself out again. The advantage of watching the line of the back, instead of the head, of a horse, to perceive the signs of the coming break, is found, as it seems to me, in this: The head sign is not the same in all horses; nor is it so unmistakable to the eye, — unless you have driven the horse enough to become acquainted with his peculiar habit of going, — and therefore not so much to be depended upon, nor so easily discerned, as the vibratory movement of the spinal column, which, while it invariably precedes the "tan-

gling up," can be easily perceived by the merest novice. But we were speaking as to how to strengthen the back, rather than how to watch it give forth the signs of unsteadiness; and to this point let us now return.

We have discussed the influence of weights in developing the muscles of the loin and back. We would now allude, briefly, to what might be called the influence of *up-hill* exercise; by which I mean the trotting and running of colts or the horse, under training, up sharp declivities. This is Nature's method of development. Running through all her educational processes, you find the element of opposition. She makes her birds to fly against currents of air as often as with them. Her fishes must contend with tides and the swift opposition of rapids; while the noblest of the species must practise their powers, often for days at a time, in vain, in the spirited attempt to jump the opposing waterfall. Surely we can discern the wisdom of this arrangement; for we can see that only by such a process can the highest structural development be attained. Turning now from theory and analogy to observation of *data*, this we know, — that horses raised in mountainous districts and hilly sections have better lung-development, and are stronger in the loins and back, than those raised in the flat meadows of the lowlands. The character of the atmosphere may, in part, account for the improvement in the lung-structure; but nothing save the fact, that horses raised in such localities are compelled, by the necessities of their

situation, to jump streams, and climb hills, can explain the increased power of their loin and back.

The Morgan horse is a wonderful illustration of this. Such a weight-puller, when you consider his size, certainly was never seen in America, and, so far as we know, never seen in the world. And to-day a colt raised in Vermont, or the mountainous sections of New Hampshire and New York, is almost invariably coupled, at the junction of the spinal column with the hip-bones, like a giant. Analogy and observation alike suggest to the breeder and trainer that every young horse should be put through a certain amount of up-hill exercise. Do not trot your colts alone on the level stretch; above all, avoid the descending grade. Practise him in the other direction; and especially, when you come to a hill, let him take it at the jump. For one, I am free to say I prefer that my colts should be driven, while being developed, along a road with a great many hills in it. How often you see horses, when trotting a race on a track that is not perfectly level, falter in their gait when taking the rising stretch, lose the strength and steadiness of their stroke, and drop behind! They could trot, you see, down a descending grade; they could move fast, even on level ground: but they were too weak in the back and loins to force themselves up the ascent. Had they been properly trained, and especial care been exercised to develop them at the desired point, they would have kept their length of stride and powerful stroke from bottom to top, and

come in the winner, instead of being disgracefully beaten. And yet the fault was more with the trainer than with the horse; because the horse could not reason, while the trainer's business is to think, and think for the horse, not only during the few moments of the race, but during all the months, and years even, that precede it. And here I wish to call the reader's attentention to the influence of slow exercise in connection with weight-pulling. Good steady team-work, such as a horse finds in ordinary farm-labor, is, in my estimation, one of the best methods that can be adopted to develop many horses in muscular strength. Horses that are narrow in the chest, and weak in the back, are especially benefited in this way. Many colts that cannot command their legs, that hit their knees, "grab over," "hitch," and the like, if put to team-service for a year or two, will come out of the discipline in splendid health and condition, and able to go fast without hitting a hair. This I know from actual experience. A great many colts are being trained on race-courses to-day, at great expense to their owners, and risks to themselves, in reference to which it may be said, that it would be vastly better for all concerned if they were taken from the track, and given to some old farmer to use on his farm for two or three years. In that time their frames would spread, their chests expand, their bones harden, their muscles enlarge, and they would escape the fate which now awaits them, — a premature break-down and an early death. I hold that slow

work for some colts is the only work which they can stand with safety, and therefore the only work to which they should be put. It is the best way, only because it is the *only* way. It is to correct faults of formation, rather than to develop perfect formation. This distinction being understood, I give it my hearty indorsement.

We have now progressed so far in our discussion touching the best way to develop the natural capacity of the colt, in order that he may go fast and far, that the matter of *driving* must be noticed; and we will proceed to consider it. I do not write with the professional's knowledge or practical experience in racing, nor, indeed, from the professional's stand-point. The object of this book, so far as I am connected with it, is not to attempt to teach professionals in their especial branch of business, of which I know nothing, but to make certain suggestions, based in part on the opinions of other men, and in part upon my own study and observation of the horse when in action, as driven by gentlemen on the road, or at our annual fairs. In many respects it is more difficult to drive a young and untrained horse well upon the road — requiring greater quickness of the eye and hand, and finer control over one's self — than to drive trained animals on a smooth level track in the public race. Especially does it require intelligence and a goodly degree of skill to drive a colt in such a way as to prevent him from acquiring vicious habits of going, and to confirm him in

the practice of good ones. And it is with the driving of colts that we will begin.

We will suppose that your colt is so far familiar with the harness and wagon, that it is safe to drive him on the public highway. In the first place, avoid driving a colt in a two-wheeled sulky. No matter how well it is balanced, the pressure on his back will be variable; and before you are aware, by the spring of the shafts up and down, unsteadiness of gait will be the result. A four-wheeled wagon, light as circumstances will permit, is far preferable. In such a vehicle his stride will be steadier, and his confidence in himself far greater. Another great advantage is found in the fact, that, in a four-wheeled vehicle, you are seated so far back, that you can watch the movements of his limbs, and observe whatever is wrong in their action. This is a source of great satisfaction to a driver. The first lesson to inculcate in your colt is, that he is to start off slowly. For the first quarter of a mile, let him walk. It is well to have him start into a trot of his own accord. This a sprightly colt will naturally do; and his gait will soon become, without his being urged, fast enough for the road. If he is two years of age, you can jog him from four to ten miles three times a week for the first month, with decided benefit to him. This distance is sufficient to take the friskiness out of him, and make him understand that it means business. Some advocate only two or three miles every day; but I think that a longer distance, with a day of rest between the exercises, is far

preferable. After the first month, you can begin to let him out a little. Very likely, before this, he has begun to get an inkling of his powers, and showed a disposition to avail himself of the smooth stretches in the road. For such manifestations you have been anxiously looking; and their coming is a delight to your soul. It is the sure evidence that your colt has "got it in him;" and that, with proper education, he is bound to be a trotter. Now select your nicest bit of ground, straight and level as may be, not more than fifty rods in length, at least two miles from your stable, so that, by the time he reaches it, the effervescence of his spirits has worked itself out; and when you have come to it, and he begins to lift his head, and feel of the bit with his tongue, — which he is pretty sure to do, — do not restrain him, but let him go it. Don't say any thing to him. It is his affair, remember; and let him enjoy it undisturbed. Simply steady him slightly with the lines; and after he has gone what you regard as a sufficient distance, and while he is in full blast, and eager as a young hound on the scent, take him gently in hand, and slow him up. Now is your time to praise him. Call him pet names; flatter him; reach over and pat him with your hand. Make him feel that he has done something worthy, and that you are proud of him. Do not smile incredulously as you read this, and say a colt can't understand you. A colt *can* understand you. Among all animals, the dog only is more susceptible to praise. If you have the right stuff in you, you cannot drive a

colt a month without a kind of half-human intelligence springing up between you and him. He will recognize you when you enter his stall. He will grow to expect your caress when you mount the seat and take the lines. He will keep an ear turned as you jog, to catch your lightest word. I have known horses neigh back an answer when their driver spoke to them. It is a great thing, believe me, to establish this understanding between you and your colt. With this spurt be content. Try no more that day. Jog him through his journey, and bring him home to his stable with only that one memory in his mind.

Let him rest a day, then try him again. Before you get within fifty rods of that stretch of road, you will find your colt anticipating it. I have no doubt but that he has thought it all over in his stall, and made up his mind how he would strip out when he reached that spot again; for no sooner has he come to it, than, without a word from you, or the movement of a line, he will begin to stir the bits in his mouth, lift his nose into the air, elevate his tail a little, and go at it. This is the way that a colt should be taught to trot. It should be of his own free accord; the mere overflowing of a vitality so vigorous and buoyant, that it cannot be restrained. An old horse can be urged with voice and whip, if need be; but let your colt alone. Don't urge him: make haste slowly at this point. It is not great speed that you want now, so much as a desire to go, and a correct movement of the limbs.

Educate him in the desire, and confirm him in regularity of stroke, and the speed is sure to follow in due time. If you find that he is getting a little sluggish in his movements, let him rest: hold up for a week. It is evident that he is being overdone; and to overdo at this point of his education, will, in the majority of cases, prove fatal to the colt's promise and the owner's hopes. Another sure sign that you are exacting too much of him is seen when he begins to *hitch* in his gait. This *hitching* comes from driving too fast and too far; at times from over-weighting the colt. I quote the following from that most admirable work by Hiram Woodruff, "The Trotting-Horse of America." Speaking of this matter of over-working, he says, —

"The work must be according to his constitution, to the rate of his growth, and to his heartiness of feeding. This jogging will probably be about five or six miles a day, and the spurts not above a quarter of a mile. He must be carefully watched to ascertain whether he improves or not. If not, he is to be let up a bit: for his improvement at this age ought to go on all the time; and will, if he is all right. Rapid improvement, however, must not be expected: ever so little will do; but it ought not to stop altogether. At this time, you will often see him break his gait; and this is an indication that he has had too much work for his age, and has got sore on it. But it may not arise altogether from overwork: therefore put the rollers on, and work him gently, changing them from leg to leg as required.

The colt now finds something on his legs, besides the boots, which was not there before; and it will alter his way of going. He must be nicely handled now. You must use all your observation and best judgment, with a light but firm hold of the reins. In all probability, he will trot square again with the rollers on; and, as soon as he does so, let him up for a little while. When the broken gait shows, he must not on any account be kept on without a change; for, if he is, it may become confirmed. On the other hand, I never like to let them up until I have got them to trot square again; for, if they are so let up, they may not trot square again when their work is resumed."

There is another point of prime importance in driving any horse, but especially a young one: it is the way you handle the reins. Most drivers overdrive. They attempt too much; and, in so doing, distract or hamper the horse. Now and then you find a horse with such a vicious gait, that his speed is got from him by the most artificial processes; but such horses are fortunately rare, and hence the style of management required cannot become general. The true way is to let the horse drive himself, the driver doing little but directing him, and giving him that confidence which a horse alone gets in himself when he feels that a guide and friend is back of him. The most vicious and inexcusable style of driving is that which so many drivers adopt; viz., wrapping the lines around either hand, and pulling the horse backward with all their might and main, so that the horse, in point

of fact, pulls the weight back of him with his mouth, and not with his breast and shoulders. This they do under the impression that such a dead pull is needed in order to "steady" the horse. This method of driving I regard as radically and superlatively wrong. It would tax the ingenuity of a hundred fools to invent a worse one. The fact is, with rare exceptions there should never be any pull put upon the horse at all. A steady pressure is allowable, probably advisable; but any thing beyond this has no justification in nature or reason: for nature suggests the utmost possible freedom of action of head, body, and limbs, in order that the animal may attain the highest rate of speed; and reason certainly forbids the supposition, that by the bits, and not the breast-collar, the horse is to draw the weight attached to it. In speeding my horses, I very seldom grasp the lines with both hands when the road is straight, and free from obstructions. The lines are rarely steadily taut, but held in easy pliancy, and used chiefly to shift the bit in the animal's mouth, and by this motion communicate courage and confidence to him. I find, that, by this method, my horses *break* less, and go much faster, than when driven by men who put the old-fashioned steady pull upon them. I know of no writer who expresses my ideas, in the main, so accurately as the writer whom I have just quoted: —

"In all his work, the colt is to be taught to go along without being pulled hard. His mouth may be easily spoiled for life by teaching him to tug at the bit now;

and he is not at all likely to make a fast trotter, if to trot he must always have his weight upon the driver's arms. There have been some fast trotters and stayers that were hard pullers; but they would have been better horses but for that fact. Still it is to be remembered, that, when going fast, the colt or horse will often want to get his head down, and feel the bit sensibly. He will not, in nine cases out of ten (or can not, which comes to the same thing), do his best without it. The object of the driver should then be to support him with as little pull as possible, but still to support him. The horse with a good mouth will always feel the driver's hand; and, when the latter is as skilful as he ought to be for the handling of the first-rate fast trotter, he may play upon the rein with a touch like that of a harper upon the strings, and the horse will answer every touch with the music of the feet and wheels.

"On the other hand, if, when the colt takes hold of the bit, the driver does nothing but hold on like grim death to a dead darky, it soon becomes a pulling-match between them: and before the colt is of age to trot fast, and stay a distance, his pulling has become a vice of the most troublesome and mischievous description; his mouth has become so callous, that he pulls a wagon and driver along by the reins instead of the traces; and, by the dead drag between him and the man behind him, he loses a great deal of the power that will be wanted to sustain him when the pinch comes."

This point is put plainly and eloquently, and, coming from the greatest master of driving the trotting-horse America has ever had, is to be accepted, and will be by sensible people, as a law not to be violated. This *pulling* style of driving not only mars a horse's action, but converts a pleasure into a toil. To draw a wagon by the reins is hard work for the horse, and equally hard work for the driver. It kills the very object of driving among gentlemen, which is recreation and rest and stimulating excitement; and makes what when properly managed is easy and delightful a most laborious and indeed hazardous proceeding. This light, easy, touch-and-go style of holding the lines and guiding the horse is supposed by some to be insufficient to prevent a horse from breaking his gait; but, far from this being true, the fact is, it is the *pulled* horse that is most likely to "*kink*" up and get "*twisted*" in going. Nature has so adjusted the head and tail of a horse, that they assist him, when stretched in rapid motion, to keep his balance, and direct himself. All speedy animals run with streaming tails and straightened necks, and noses pointed ahead; and it stands to reason that a horse with his head curbed under, so that his nose is nearly pulled against his breast, cannot move at his fastest rate of going. His driver's insane conduct keeps him out of balance, and compels him to go in an unnatural way. For the same reasons, check-lines should be avoided, especially on colts. Now and then it may be necessary to put on some such contrivance; but it argues that the colt or horse

has false action by nature, and detracts materially from his value. I am not talking about *track*-horses, but about gentlemen's driving-horses; and I advise all purchasers to "bid low" on a colt that cannot trot all that he can trot without any of this top-hamper whatever. Buy no colts that have to be screwed up or screwed down by patented inventions about the head; but select one that moves off with an untrammelled neck, and nose held naturally at just the right angle for beauty, and which is held by himself in the right position to accommodate his movements, whatever be his gait. Beware, also, how you buy colts that have to be "booted" and "padded," and gauntleted with "rollers." If you wish to buy a horse-furnishing establishment, buy one; but don't buy it with a sample of all your stock tied round the legs of your horse. Buy no colt, young man, that don't *go clear* in every respect. If he brushes a hair in going, leave him in the breeder's yard for some fool to purchase: never make one of yourself by buying him. His owner will find purchasers enough, no doubt!

But to return to the matter of "breaking." Ordinarily speaking, do not allow your colt to *break* at all. Remember that your business is to educate him to *trot*, not to teach him to run. But if he does ever break, then let him break with a vengeance. Let there be no half-way work about it; no halting and hobbling, and coming back in the breeching, but a regular plunge forward, and a rocket-like movement through

the air. If he breaks, make him *gain by the break.* Make him understand that his business is to *go ahead*, hit or miss, in one style as long as possible; but to go it, style or no style. If you have a green horse, that comes back in the breeching when he breaks, or even when his backbone begins to twist up before the break has actually begun, then give him the whip: give it to him sharp and quick. Get all that nonsense out of him at once: keep him sailing. Do not *yank* him now, and grab at him with the lines, as if your life depended on pulling your wagon over his back; but let him take four or five jumps until his back-bone is straightened out, and he has got levelled down to it, and is gathering his legs up under him like a racer; then move the bits in his mouth, and "pick him up." Don't saw and sway him, and double him up until his nose is down between his fore-legs, and his haunches up over his shoulders. Remember that his back must be kept straight at all events, or he will not catch his trot square, or be able to keep it when he has caught it. With a sharp, firm turn of your wrist, and a lift on the bit, pick his nose upward, and slightly to one side: this will throw him from his balance just enough to make him "grab for his gait," and not enough to twist him into unsteadiness or to slack him up. You may not succeed the first or second time; but persevere until you have educated your wrist and eye to act in conjunction, and you will then have mastered one of the most difficult feats of finest horsemanship. Sometimes a horse has to be broken up to

the whip in order to learn his own speed. When a horse is picked down to his trot, after you have got him at his best jump, he is forced to trot fast as lightning for four or five strides, or go on to the ground. Such a gait, even for a few steps, to a green horse, is a *revelation to himself.* It gives him a hint that he never forgets, or fails to improve upon. It is to him what the first dozen strokes in the water are to a young swimmer, — a revelation and an ecstasy. *He can do it!* The feat is accomplished! Hurrah! It is just so with a young horse. After his first successful burst of speed, he is a new creature. A knowledge of his own powers, of which he had not dreamed, has come to him. He is lifted on the wings of a new pride. Henceforth he is ambitious to excel. His career has begun.

The most difficult point in settling a horse from a run to a trot is, not in picking him up, but in easing him away. In nineteen cases out of twenty, the horse is quicker than the man. We hold our horses too long: we do not let them catch their trot when they are ready to do it. Bear this in mind, reader, the next time your horse breaks; and, when the moment has come, let go of him. Let every thing go by the run, as sailors say. Still this should be observed, — that it is well to steady or restrain the horse slightly for an instant after the break, in order that he may have an opportunity to collect his thoughts, and confirm his stroke: but still the law is, to keep him going; that is, if your object is to make speed.

There is one peculiarity about the horse in trotting which I have never seen mentioned in print; and yet I have often observed it, and know it to be important. I refer to the way in which a horse *breathes* when moving at the top of his speed. It is an erroneous idea to suppose that horses breathe as regularly in action as when standing still or jogging. Indeed, they *do not breathe at all for strides at a time* when making their spurts. They act precisely as a man does when making a jump. When a man is about to make a great jump, what does he do? This: He takes in a long breath, filling his lungs to the full, and then goes it! Not until the leap is made are the lungs inflated again. It is precisely so with a horse when trotting, and about to make a spurt. Suppose you have been trailing, and have come to the last-quarter post three lengths behind the leading horse, which you feel is doing about all he is able to. It is now or never with you. You know it; and *your horse knows it too.* You move the bits in his mouth, and call on him. He answers your call with a rush that carries him like a bullet to your rival's wheel. *Hold him there.* Let him get his breath. If you urge him now, he will break *sure.* If he can stay where he is, you are all right. He knows what you are at; and, when you are within fifty yards of the wire, call on him again, and he will jump himself to the front as sure as fate, unless he is positively overmatched, and his opponent is handled in the same way. This is the secret of the *grand rushes* some horses are accustomed to make near the

close of the heat, and which make the race, even when they are evidently overmatched, uncertain until the heat is actually finished. How many times Flora Temple, under the skilful management of Hiram Woodruff, would wrench victory from the grasp of defeat by this peculiarity of movement and power! I know a stallion — not on the course, and thus unknown — that possesses this power to a wonderful extent. No matter how fast he is moving: there is always another link in him that he can let out if necessary. I have seen him gather himself for one of these rushes, and, when called on, send himself through the air like a bullet from a gun.

I wish, at this point and in this connection, to make several quotations from Hiram Woodruff's "Trotting-Horse of America," — a book filled with much interesting knowledge and advice, and which, reader, if you do not own, you should purchase at once; and I do this because his views are in close accordance with mine, and because they are expressed with great simplicity and accuracy. Speaking of the management of the colt, he says, —

"When you come to drive him, it should be with a light, firm hand. The reins should be handled nicely and gently. The driver can manage the colt without any jerking or pulling and hauling, if he keeps cool, thinks of what he is about, and uses proper care and patience. The mouth is now fine and sensitive; and it ought to be kept so, because this is the great organ of communication between a good driver and the trotter,

when he is cultivated and improved into a fast horse. What you want the trotter to do when he is at speed is to be got into him through his mouth. You may encourage him by speaking to him, or sting him into a greater effort with the whip; but neither of these is half as good as the play upon the reins, with which you let him know what you want through his lively, sensitive mouth. You are then to keep in constant mind the necessity of not impairing the colt's mouth by rough handling of the reins. If you pull and lug at the bit, the colt, in his efforts to resist what hurts him, will very soon pull too; for he will find out that this numbs and deadens the jaws: but this is at the expense of ruination to the mouth. It will become hard and insensible; and the first and largest part of the mischief which goes towards the making of a hard puller is done.

"When you begin to drive the colt, you must find out what sort of bit suits him best. This is matter of experimental trial. Use both bars and snaffles, all easy; and by feel of hand, and observation of the way in which the colt carries his head, you will soon be able to ascertain which bit suits him best. The nicety of your touch as driver should correspond to the lively sensibility of the colt's mouth. A bad-tempered, hasty man will very soon spoil a good-tempered young horse. The use of the whip ought, as a general rule, to be avoided. In some cases, it must be used; but it should never be brought into play when the horse does not

know what it is for. A slap with the whip, which almost makes the colt jump out of the harness, is often immediately followed by a powerful snatch on the reins to pull him back again. Both of these are as bad as bad can be. Sore mouths, bad tempers, and broken gaits, are the almost inevitable results of such handling. On the other hand, if the colt has been well broken, and has a good lively mouth, and the driver handles the reins skilfully and thoughtfully, the colt will soon learn to understand every move of the hand, and to answer it. From this it follows that you ought to make no move with the bit without a definite object. When you feel an impulse to do something with the reins without knowing what you are to do it *for*, don't do it at all. Such moves only fool the horse. Everybody admits that a very hard-pulling horse is a nuisance; and everybody knows that some horses will pull if they are to trot, and will not extend themselves without a strong pull: but, even in regard to these, it is not well to keep up a steady, rigid pull all the time. I say, Rather pull for a space, and then ease off, not suddenly, but gradually; and by this means they will not pull quite so hard, and will trot faster. It is not natural for horses to pull hard. Some there are, of uncommon ardor and determination, that will pull in company; but more are made hard pullers by faulty handling when young, which has deadened their mouths.

"In order that a fast horse should be under circumstances to do his best, he should be as much at his ease

in his harness and general rig as possible. If he is not, he is placed at almost as much disadvantage as if sore or stiff, or suffering from some bodily ailment. You may see horses brought out of the stable to trot with a very tight check to keep their heads up, and a tight martingale to keep it down. Such a horse is in irons; and when to this is added a dead drag at the reins, and no movement of the bit from end to end, I cannot see how he should do his best. People talk about a steady, bracing pull; but, in my opinion, that is not the right way to drive a trotter. There is a great difference between letting go of your horse's head, and keeping up one dull, deadening pull all the time. The race-horse riders practise what is called a bracing pull; and a great many times I have seen their horses tire under it without ever running their best. The steady pull choked them. The pull should be sufficient to feel the mouth, and give some support and assistance, so as to give the horse confidence to get up to his stride. More than that is mischievous. To keep the mouth alive, the bit must be shifted a little occasionally. But this is not to be done by a pull of the hand on the rein. A mere half-turn of the wrist, or less than half a turn, by which the thumb is elevated, and the little finger lowered, is sufficient to shift the bit, keep the mouth sensitive, and rouse the horse.

"The reins are to be steadily held with both hands while this play with the wrist is made; and it is, of course, only to be done with one wrist at a time. The

hands should be well down; and the driver ought not to sit all of a heap, with his head forward. Neither should he lean back, with his bodily weight on the reins; which, in that case, are made a sort of stay for him. He should be upright; and what pulling he must do should be done by the muscular force of the arms. The head and the arms are what a good driver uses; but some have their arms straight out, and pull by means of putting the dead weight of their bodies on the reins. If instead of lying back, and putting their bodily weight on the reins, with which latter they take a turn round their hands, drivers would depend upon their muscular strength, they could let up on the pull, graduate it, and so ease the horse from time to time instantaneously. The driver who depends upon the arms has command of the horse: he who substitutes bodily weight, with the reins wrapped round his hands, has not half command of the horse, or of himself either; and, if the horse is a puller, he will soon take command of the driver. The reason of it is, that there is no intermission of the exertion, no let-up, either for man or horse. Besides, in that way of driving, it is impossible to give those movements to the bit which seem to refresh and stimulate the horse so much. When a horse has been taught the significance of this movement of the bit, the shift by the turn of the wrist, he will never fail to answer it, even though he should seem to be at the top of his speed. The moment he feels this little move of the bit in his sensitive mouth, he will collect himself,

and make another spurt: and the value of this way of driving is, that the horse is not likely to break when thus called upon; while a high-strung, generous horse, if called upon for a final effort with a whip, is as likely to break the moment it falls on him as not. I have won many a very close heat by practising this movement; and therefore I have no hesitation in recommending it. It is not difficult to acquire; and the horse soon comes to know what it means.

"Let us come now to the way of taking hold of the reins. A wrap around the hand, such as running-horse riders take, is clumsy and bad. I do not know whether many people take hold of the reins as I do, or not. Perhaps not. Sim. Hoagland is the only one who takes hold precisely as I do, so far as I have observed. When we have been jogging horses together at early morning, we have often talked over these matters; and, whether our way was the best way or not, we could never see any other that suited us half as well.

"I will try to explain how I hold the reins. I could show it in two seconds. Take, first, the right-hand rein. This, coming from the bit, passes betwen the little finger and the third finger, over the little finger, then under the other three fingers, and up over the thumb. The left-hand rein is held in the left hand exactly in the same way; but the bight of the slack of the reins is also held between the thumb and forefinger of the left hand. This gives more substance in that hand; but, if it is found inconvenient to have it there by those

who have small hands, it may be dropped altogether. A firm grasp on each rein, with the backs of the hands up, and without any wrap, is thus obtained. It is a great point in driving to be able to shift the reach, — that is, the length of the hold you take, — without, for an instant, letting go of the horse's head. With this way of holding the reins, it is easily done. If I want to shorten the hold on the left-hand rein (the near rein), I take hold of that rein just behind the left hand with the thumb and forefinger of the right hand, and steady it. This is very easily done; and it does not interfere at all with the command of the off rein with the right hand. The near rein being thus steadied behind the left hand, I slide that hand forward on the rein, which is kept over the little finger, under the other three fingers, and over the thumb all the time, and then shut the grasp again on the new reach. A shift with the right hand is made just in the same way, — by taking hold and steadying the rein behind that hand with the thumb and forefinger of the left hand.

"I have often observed, that, with other methods of holding the reins, there was great difficulty in shifting the reach. The driver tries to do it; but, for an instant, he has let go of the horse's head on one side altogether, and broken his stride. When this is found to be the case, the dead pull all the time is adopted; and this spoils the freedom and elasticity of the horse's stride, and chokes his wind. I do not intend this to be taken as instruction for professional drivers. Every driver

has a way of his own; and some of them have very good ways; for, as I have taken occasion to state before, they drive well. But what I have set down above may be of service to gentlemen who drive their own horses, and to those young men, who, having as yet no settled method of their own, may think it well enough to try that which I have found to answer. Another word about bits. I am opposed to the use of severe bits, and complicated things of that sort. Some of the inventors of such things say that I am prejudiced; but I don't think I am. If a man has a horse that cannot be driven with a bar-bit or a snaffle, he may as well sell him, except it is a very exceptional case. Where are these kinds of severe complicated bits most in use? Why, in England. Five hundred or a thousand of them are used there to one that is used here. And where do the horses trot the best? These bits are mostly invented by men who have had no practical experience whatever as to what sort of driving a fast trotter requires to keep his gait square and bold, and induce him to do his best when it is called for. When a horse has a good mouth, — and a bad one is almost always the fault of bad breaking and driving, — the easier the bit you use, the better he will act for you, and the more speed he will show you."

This, also, touching the matter of punishing horses when they break: —

"In nine cases out of ten, a horse punished without his knowing what for is punished for his driver's fault, not

for his own. Confidence cannot grow in such circumstances. If you observe two good trotters who have been accustomed to work together in double harness, you will see what speed and steadiness follow from confidence in each other. Each knows that he or she can depend upon the mate to keep up the stroke, and maintain the even pull and level action. It is of just as much importance that the single-harness horse should understand and have confidence in his driver, as it is for a double-harness horse to know the power and ways of his mate. Unless this sort of mutual understanding can be established between the driver and the horse, the latter can never be relied upon to do his best. The readiest way to produce it is to use him gently but firmly, and to accustom him to the system of telegraphing to him by means of the reins in your hand and the bit in his mouth. The whip is to be kept very much in the background while you are cultivating confidence in your horse. It is more likely to prove an obstacle than an aid.

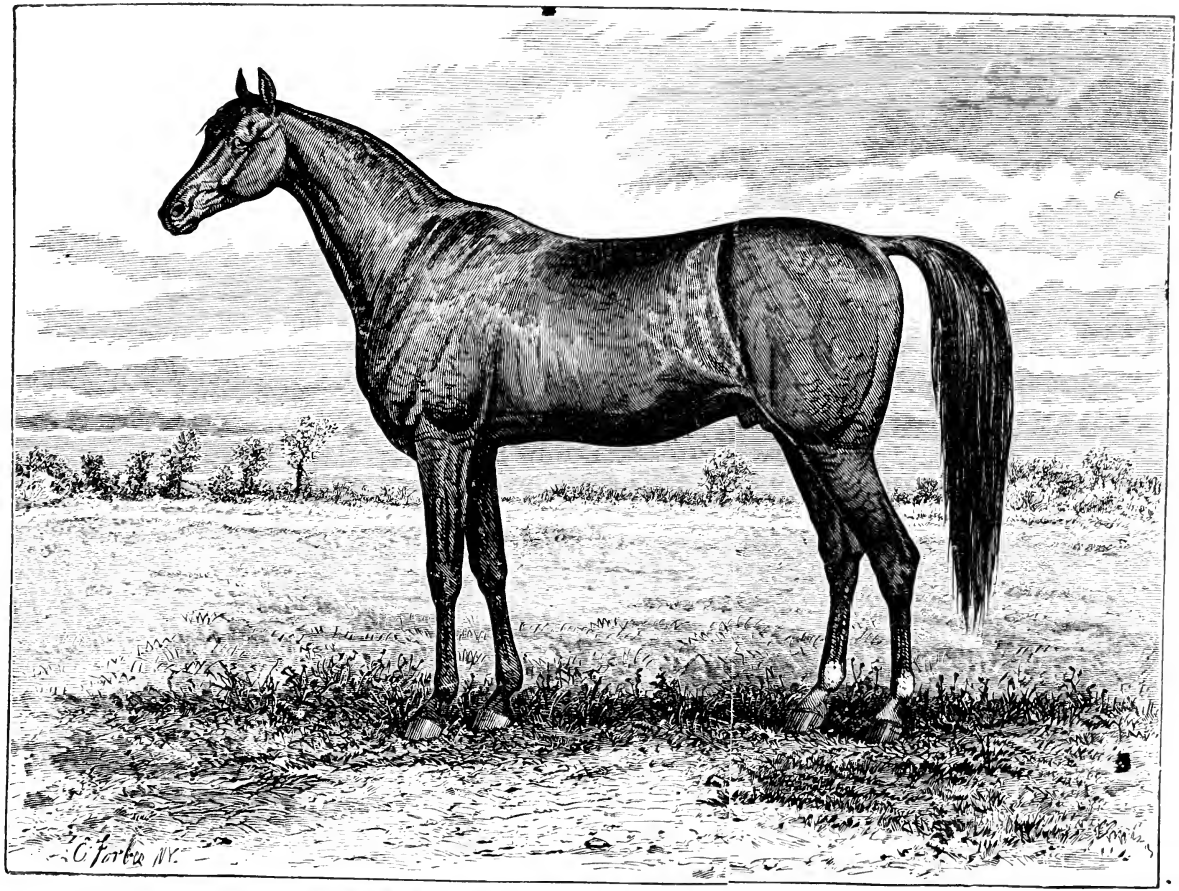
"I now come to the last critical point in this matter, — when the horse is tired, and inclined to break. In a long brush, you will often have reason to look for an attempt to break; and it will generally be in circumstances when the horse must not be suffered to do it. There are times, as I have shown, when, with a tired horse, a break may be brought on with advantage; but there are others when all will be lost if a break occur. To prevent it, give the shift with the bit when you per-

ceive that he begins to tire, and soon renew it: this will revive and rouse him, and take his mind off the break which he has felt he was about to make. The signs of a coming break will be discovered by watching the head and ears of the horse. The attention of the driver ought always to be fixed upon the head of his horse. Many a heat is lost by neglect of this matter. A driver is seen coming up the stretch a length or a length and a half ahead. Both the horses are tired; but the leading one could win. The driver, however, when he gets where the carriages are, turns his head to look at the ladies, or to see whether they are looking at him. Just then the horse gives a twitch with his ears. The driver don't see it. Up flies the trotter; and the ugly man behind keeps his horse square, and wins by a neck."

I have now touched upon the essential points in reference to the training and driving of colts and horses. I wish the reader to bear in mind that I have written in the way of suggestion, and not of dictation; my object being to awaken thought, rather than to lay down inflexible rules. Concerning the preparation which it is necessary to give a horse in order to make him fit for a public race, it does not seem to me that I am called upon to speak. The object of this book does not call for such a discussion. The men who will, for the most part, I presume, purchase and read it, are men in no ways interested save as spectators in public racing. If any reader has a horse that he wishes to

bring out, and which must, therefore, receive the grand preparation, his true course is to commit him to the charge of some experienced trainer and driver, to whose opinion and advice every thing relating to the animal should be referred. I have written rather in the interest of the breeder, and of that large, and, I am glad to say, rapidly-increasing class of gentlemen who own, and love to drive, the trotting-horse. Among these I am happy to be numbered as a companion. I hold that no healthier recreation or innocent amusement is open to the business and professional men of America than this of driving speedy horses. It gives relaxation to the mind, breaks pleasantly and imperatively in upon the prolonged strain and tension of anxious thought, begets and nourishes a spirited but harmless rivalry, and compels a delightful and profitable companionship with Nature. I know, that, in the minds of some, prejudices exist against men of professed piety indulging in such an amusement. To own a fast horse opens up before their prophetic vision truly awful contingencies. It is needless to say that I do not, to any considerable extent, share in this anxiety. I have never discovered any law in nature, or injunction in revelation, which makes it a duty for a good man to own and use a poor specimen of any species of animals. I see no reason why such a person should have none but homely birds in his cages, black sheep in his flocks, lean kine in his fields, and lazy horses in his stables. The fact is, a good man has a right to the

best. The perfect type is the only fit type. Any thing less than this is unworthy, — a lapse and falling-off from the original standard as erected in the creation. A horse was made for speed as truly as a bird was made to fly; and flight and speed become, therefore, standards of appreciation and value. If a man objects to speed, then why drive a horse at all? Why not take a donkey or a cow, and have done with it? If piety is compatible only with slowness of motion, then a horse is no animal for a Christian to own anyway; for the nearer a horse approaches, as I conceive, to the original type, and also the divine intention as embodied in it, the more speedy he becomes. Beauty and speed are therefore, as I conceive, legitimate objects of desire and admiration; and, since the horse embodies these two characteristics in a greater degree than any other domestic animal, it is a proof that the man is of sound judgment, and lacketh not wisdom, who desires to own a beautiful and fast horse. Indeed, a man that does not love and desire such a creature seems to me to be lacking in some essential elements of human nature. Something was omitted in his construction, which, being possessed, would have made him larger and better. I do not object, therefore, either to fast horses, as the phrase is, or to driving them fast within proper restrictions, such as common sense and humane impulse will naturally suggest; nor do I see any reason why gentlemen owners and breeders alike of fine horses should not exhibit their paces and their rate of speed



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at our annual fairs, when the people come together to inspect and compare, to buy and sell, the vegetable and animal products of the country. If it is right to offer and receive a prize for fatness of swine, and stoutness of oxen, and fleece-bearing capacity of sheep, and even fancy kinds of hens and pigeons, then I do not see why prizes should not be offered and contended for in respect to the comparative speed of rival horses. No one has a right to condemn an honorable rivalry among honorable men in honorable things.

CHAPTER VII.

THE HORSE'S FOOT, AND HOW TO SHOE IT.

We now come to the consideration of the most difficult and interesting subject a horseman can consider, — the matter of shoeing. Hundreds of volumes have been written upon this topic, and hundreds more, I presume, will be published; and yet no ground of common agreement has, as yet, been found, and may not be for years to come. It is not, therefore, with the expectation that men will agree with me, or that I shall be able to harmonize antagonistic opinions, that I now address myself to the discussion; for such a hope would be vain, and the result of the effort useless. I do not doubt that what I have to say will stir the wrath of some, and excite the active hostility of others; but to this I am indifferent, if peradventure I may be able to make a matter hitherto veiled in darkness, and shrouded in mystery, to the popular eye, more plainly understood by those who are more directly interested in it than all the veterinary colleges in the world: I mean the actual owners of horses. I do not write in the interest of any clique of

men or pet theory. I have no hobby, and am a member of no clique. I have no "patent shoe" to advertise, nor wealthy patron to flatter or fool. Nor have I any reputation to risk, or "new principles" to bring forward. My only ambition is to write in a sensible way what I have learned by reading and observation touching the horse's feet, and the treatment they should receive in shoeing. Touching the literature of the subject, I yield to no one as a student. The leisure of years has been devoted to its perusal. I believe that my reading, from the oldest Italian treatise to the "last book out," has been as wide and thorough as any person's to-day living. Nor have I read with prejudice, or to discover some principle which I might put in metallic form, patent, and send out to the world heralded as "the great combination-shoe." I have read simply that I might know what other men had thought, and, if possible, discover the source of those atrocious errors in modern farriery which are a disgrace to our veterinary service, and a source of torture to the horse. I do not mention this in vanity, — although it might be so construed by those who cannot understand frankness, nor appreciate the candor of honesty, — but to the end that those who peruse these pages — the average farmer and farmer's boy — may feel that they are reading the opinions of a man who has gone faithfully and patiently to the bottom of the subject, so far, at least, as mastering its literature goes, and is teaching them with a knowledge of all the facts in the case in his mind. This, also, should

be said in this connection: I do not propose to dictate. My object is suggestion, not dictation. If I advance opinions, I shall give the reasons which support them. If I declare a thing wrong, I shall show why and wherein it is wrong. The reader can think as he wishes; but I propose to have every one know what I think, and why I think it.

The trouble with many books on this general subject is, that common uneducated readers cannot understand them. To a vocabulary essentially technical and scientific, and therefore unfitted to be the vehicle of imparting ideas to the masses, is attached a habit of using Latin and French terms, which not one reader in five hundred can translate. Indeed, it would seem that certain authors suppose that the use of a Latin nomenclature increases the value of description, and enhances the reputation of the writer; for they use it as often as possible, in season and out of season. If they speak of the last bone in the foot, instead of saying the pedal bone, they say the *os pedis;* if of the caronal bone, it is the *os caronæ;* and so on. The result is, that none but college-educated men among the masses can follow their diagnosis, or understand their descriptions; and a book which might have been a delight and profit to the purchaser, and which was bought in the expectation that it would be, is, after repeated attempts to understand it, thrown aside in disgust, and rightfully pronounced a humbug.

Now, I wish all to be assured at the start that there

is nothing mysterious or incomprehensible touching this matter of the horse's foot. It is as easy to understand the several parts of the foot, and their use, as it is to understand the shoulder or head. Many authors begin their books in a style of expression calculated to give the reader the idea that the foot of the horse is the most difficult portion of his organism for people to comprehend, and that they must not expect to comprehend it like a veterinary surgeon (!), and must not be surprised if they do not understand it very well when they have got through with reading their work. The latter suggestion was, beyond doubt, most accurate! Indeed, it would have been a matter of great surprise to me if they had understood any thing by the time they had finished the book. But the incomprehensibility existed not in the difficulties of the subject so much as in the ignorance of those who professed to be able to teach people concerning it. The plea of "mysteriousness," and the "inherent and ineradicable difficulties of the subject," are excellent subterfuges whereby inattention and stupidity can veil their own lack of understanding: but it is put forward at a terrible risk of exposure in reference to the horse's foot; for there is no part nor element of the foot, there is no bone or fibre, there is no duct or secretion, that a boy of twelve might not readily comprehend, and that, too, easily. Indeed, every part of the foot is peculiarly distinct and individual, and in its own structure and location suggests, as plainly as Nature can suggest any thing, its office and use. In fact,

I know not any other organ in the whole frame of a horse so easily and quickly understood as the foot. It is comparatively simple in its formation, and the mutual adjustment of its several parts is quickly mastered. It is, therefore, not to a mysterious subject, but to one easily understood, that I now invite your attention. The subject is *the horse's foot, and how to shoe it.*

One of the greatest obstacles in the way of reformation — for nearly all admit that our system of caring for and shoeing the horse's foot is simply atrocious — is to be found in the ignorance of the average smith. I would not speak disrespectfully of any man, or class of men, who earn their living by the sweat of their brow; for their industry commends them to courteous mention: but it is a fact, that the average horse-shoer of the country is distinguished chiefly by what he does not know, rather than by what he does understand, of the principles and uses of his craft. The only excuse that can be urged in his favor — and, to any candid and thoughtful person, it will, I doubt not, seem ample — is this: No one has ever taught him any thing. There has been literally no avenue of knowledge open to him. In ancient times, veterinary surgeons were the smiths; and by them gentlemen were taught how to shoe their own horses. It was the duty of the veterinary to do this. The education of no knight was regarded adequate for a martial career until he was thoroughly instructed in the principles and practice of farriery. It was not beneath

the pride of a noble to desire to excel in protecting the feet of his gallant steed; and no one, either noble or base-born, could presume to touch a foot to fit a shoe to it, unless he had been regularly and fully instructed in the art of farriery, any more than a physician could now be admitted to practise, or a lawyer to plead, unless they had gone through the necessary medical or legal study. By this method the smiths were made intelligent, and worthy of popular support; and, to every young man wishing to acquire the art of farriery, means were not lacking. But to-day, and especially in this country, our young men are not taught at all, and cannot be taught, save as to the merest mechanical part of the trade; because the person under whom they are is as ignorant as they are touching the anatomy of the horse's foot, and the literature of the subject, which is rich in suggestion and fact; and, indeed, differs from the apprentice in nothing save as to his years. In such a state of things, no advance in proficiency can be made. Each generation has the same knowledge, and lack of knowledge, as the preceding; and the poor horse continues to suffer.

In addition to this, we must add another consideration, in order that the statement of our position may be accurate; viz., that, if the smiths are ignorant, the owners of horses, for the most part, are even more so. Inquire among your acquaintances, and you will find that not one man in a hundred has any idea of the subject at all. He reads an advertisement in praise of some patent shoe,

and blindly adopts it; or else, with equal blindness and indifference, leaves every thing to the almost equally ignorant smith. Between the two, one can imagine how the poor horse must fare. It is astonishing to me that men can be so careless as to property so exposed to hazard as are horses, especially when, at a trifling expense of time and money, they might become tolerably well informed in respect to the matter. Now, I submit that the first thing that a man who owns a horse should obtain is knowledge of the foot, and the best method of protecting it; because it is the foot, and the condition of it, on which depends the value of the animal, whether he be kept for pleasure or profit. The owner of a horse should first study the foot in its anatomy and use, until every bone and particle are well known to him in their location, character, and use. The way that Nature feeds and nourishes its several parts; the points that need artificial defence, and how protected; the diseases to which it is liable; the curative applications and contrivances needed when the organ becomes injured or diseased, — these points, and other like ones, should receive close and prolonged attention until they become perfectly familiar. This is the principle universally adopted and put in practice touching any other class of property. The reason why this is not the practice of horsemen is not certainly found in any difficulty about understanding the subject to be studied. As I have said before, there is no mystery about the matter, save such as ignorance and passion,

on the part of those treating of it, have thrown around it. The foot of the horse, unlike the human foot, is very simple in its construction. The human foot is complex, filled with a multitude of bones tied together by manifold attachments, threaded in all directions with blood-vessels, and braced and held together by bunches and layers of muscle and cartilage, which, in conjunction with the other parts, make it simply bewildering to any eye save the trained organ of the surgeon or the anatomist. But, with the horse's foot, the case is precisely the reverse. It has but few bones; its venous system is not elaborate; its parts few; and its construction exceedingly simple, and so perfect, that the use of each is plainly advertised. Nature's design, in the wall, sole, bars, and frog, is not left to conjecture: it is clearly revealed. Nor is it difficult to ascertain the location of the bones of the foot, or any other essential part of the organ. Nor is it necessary for one to enter into an elaborate scientific description of the internal structure of the foot: such description is not called for in a work designed for suggestion and popular instruction, rather than for professional service. Touching the value of the foot, nothing need be said; since it is universally acknowledged to be superlative. A horse without sound feet is no horse at all; that is, the uses and services for which Nature designed him he can never perform. The preservation of the foot in its natural state, which generally is the perfect state, is of prime necessity. The main divisions of the foot are these: 1. The

wall; 2. The sole; 3. The frog; 4. The bars. The use of the wall is evidently to defend the internal parts of the foot, and furnish a support for the body. The sole has a twofold division, composed of the outer or non-sensitive sole, — the design of which is to protect the ground-surface of the foot from contusion, and assist the wall in sustaining the superincumbent weight, — and the sensitive sole, the use of which is to assist the horse, by the sense of touch, in placing his foot to the ground in such a way as to favor it, and to feed the outer sole with the material of which it is made.

The sense of touch to which I have alluded is a most essential power to the horse; for it enables him, in the very act and instant of placing his foot to the ground, to do just what all boys do when running with bare feet, — viz., favor that side or section of the foot upon which, by reason of inequality of the ground, undue pressure is brought. It is not by his eyes that a boy saves his feet from contusion: there is a power located in his foot, a power of interpreting danger before it has become dangerous, by which, although his foot has actually struck the ground, he is nevertheless able to throw the weight off from that section of the foot which is being unduly exposed. A horse, in one sense, does literally *feel* his way along. The weight of his body is thrown upon this side of his foot or that, this end or that, just as he feels the necessity of it; and this lightning-like adjustment of his weight, according to the feeling of his foot, is caused by the action of a sense so quick, that it is done

after the foot has actually come in contact with the ground.

It is also by means of this inner or sensitive sole that the secretions which feed the outer sole are deposited. On the other hand, the outer sole has for its use the work of protecting the inner sole both from contact with the ground and also with the *atmosphere*. This atmospheric contact results in absorbing the natural moisture until it becomes desiccated, or parched, so that great cracks and rents appear in it, as the farmer in August, on a clay bottom, finds great rents and cracks in the soil. In short, the outer sole is Nature's shield and Nature's stuffing for the inner sole, to ward off, on the one hand, the blows that might otherwise smite it; and, on the other hand, to keep its juices, by the means of which the sole of the foot is being supplied with needed nutrition, from being dried up. At this point we may properly inquire, If this is the use and office of the outer sole, if it holds such an important rank in the order of natural provision for the sound condition and healthy growth of the foot, why is it ever pared away? This is my answer: The reason is, because people are ignorant, and blindly follow a stupid and barbarous custom, instead of pausing to reflect upon what they are doing. Ask any smith why he pares out the sole of a foot, and he can give you no reason save that he has been taught to do so. And who, pray, taught him? Some one as ignorant as he, I reply. And so, generation after generation, a

barbarous and indefensible act has been committed, to the premature breaking-down of many valuable horses, the actual maiming of not a few, and the painful torturing of some.

No form of flesh is more sensitive to pain than the inner substance of the horse's foot. Its power of sensitiveness is like that which lies sleeping under a human finger-nail. To protect this from hurt and undue pressure, Nature has put this hard, horny shield, — viz., the outer sole; and yet I have often sat and seen an ignorant smith hack and hew and pare away this natural protection until he could actually indent it with his fingers, and little drops of blood oozed forth from within. Imagine the feelings of the horse after having been put into the shafts! He was driven forth into the dust and gravel of the streets, or sent pounding along a stone pavement, with nothing but the thinnest possible filament of horn-substance left between the exquisite inner organization of the foot, and the dirt, gravel, and stones on which he was travelling. And yet this method of procedure is not only tolerated by gentlemen of wealth and character, but vindicated and held up as the model (!) method of preparing the foot for the emergencies of actual service.

"The horn," says a recent writer, "is secreted from the living surface; and myriads of beautiful vascular and sensitive tufts dependent from this surface enter the horn-fibres to a certain depth, and play an important part in the formation of the sole. The newly-formed

horn is soft and spongy, and incapable of resisting exposure to the air; but, as it is pushed farther away from this surface by successive deposits of fresh material, it becomes old horn, loses its moisture, and, in doing so, acquires hardness and rigidity sufficient to withstand external influences: then it is subjected to wear; and, if this be insufficient to reduce it sufficiently, it falls off in scales. But the process of exfoliation is not a rapid one: the flakes remain attached to the solid horn beneath, more or less firmly, until it, in turn, commences to loosen on the surface, and yield new flakes; when the old ones separate. This natural diminution in the excess of horn of the sole is a most beneficial process for the hoof. Horn is a slow conductor of heat and cold, and, when thick, retains moisture for a long period. These flakes, then, act as a natural 'stopping' to the hoof by accumulating and retaining moisture beneath; and this not only keeps the foot cool as it slowly evaporates, but insures for the solid and growing horn its toughness, elasticity, and proper development. In addition to this, every flake acts more or less as a spring in warding off bruises or other injuries to the sole; and thus the floor of the horny box is protected from injury externally and internally.

"What occurs when the farrier — following out the routine of his craft, or obeying the injunctions of those as ignorant as himself, or so prejudiced as not to be able to reason — pares the sole until it springs to the pressure of his thumb? Why, the lower surface of the foot

— that which is destined to come into contact with the ground, and to encounter its inequalities, and which, more than any other part, requires to be efficiently shielded — is at once ruthlessly denuded of its protection, and exposed to the most serious injury. The immature horn, suddenly stripped of its outer covering, immediately begins to experience the evil effects of external influences. It loses its moisture, dries, hardens, and shrivels up. It also occupies a smaller space; and, in doing so, the sole becomes more concave, drawing after it the wall, — for it must be remembered that the sole is a strong stay against contraction of the lower margin of the hoof, — and the consequence is, that the foot gradually decreases in size, and the quarters and heels narrow. The animal goes 'tender,' even on smooth ground; but, if he chance to put his mutilated sole on a stone, what pain must he experience! This tenderness on even ground or smoothly-paved roads arises from the fact, that not only is the entire sensitive surface compressed, irritated, or inflamed, by the hard, contracting envelope, and the unnatural exposure to sudden changes of heat and cold, but the little sensitive processes contained at the upper end of each of the horn-fibres are painfully crushed in their greatly-diminished tubes; and, instead of being organs of secretion and the most delicate touch, they are now scarcely more than instruments of torture to the unfortunate animal. Not only is pain or uneasiness experienced during progression, but, even in the stable, the horse whose soles have

been so barbarously treated exhibits tenderness in his feet by resting them; and, if felt, a great increase of temperature will be perceived.

"Owing to the secreting apparatus of the sole being deranged through this senseless paring, the formation of new horn takes place slowly; and it is not until a certain quantity has been provided to compensate in some degree for that removed that the horse begins to stand easier and travel better. Scarcely, however, has the restorative process advanced to this stage, before it is time for him to be reshod; when this part must again submit to be robbed of its horn.

"The sole having been pared too thin and concave leaves the circumference of the hoof standing much higher than if it had been left intact, and apparently too long: so the wall must be still more reduced. This is done; and we now have the whole ground-face of the hoof so wasted and mutilated, that, should the horse chance to lose a shoe soon after being shod, the impoverished foot cannot bear the rude contact of the ground for more than a few yards, and the poor creature is lame and useless.

"The tenderness and lameness arising from this maltreatment are usually ascribed to every thing but the right cause; and the most popular is concussion. To avert this, and protect the defenceless sole, a most absurd shoe is required; and, still more absurd, the natural covering is attempted to be replaced by a plate of leather interposed between the ground and the sole,

and which is made to retain bundles of tow steeped in tar or some pernicious substance. It is scarcely necessary to say that this artificial covering is but a poor substitute for that which has been so foolishly, and with so much careful labor, cut away: indeed, in several respects, the leather sole, even when only placed between the wall and the shoe, and not over the entire surface, is very objectionable.

"Seeing, therefore, the natural provision existing in the sole of the hoof for its diminution in thickness when necessary, and knowing that the intact sole is the best safeguard against injury and deterioration to this region, it must be laid down as a rule in farriery, — and from which there must be no departure, — that this part is not to be interfered with, on any pretence, so long as the foot is in health: not even the flakes are to be disturbed.

"*Paring the Frog.* — This part of the hoof is that which, in the opinion of the grooms and coachmen, most requires *cutting*, 'to prevent its coming on the ground, and laming the horse;' and this reason, together with its softer texture, causes it to be made the sport of the farrier's relentless knife. It is artistically and thoroughly trimmed, the fine elastic horn being sliced away, sometimes even to the quick; and, in its sadly-reduced form, it undergoes the same changes as have been observed in the pared sole. No wonder, then, that it cannot bear touching the ground any more than the sole. Strip the skin off the sole of a man's foot, and cause

him to travel over stony or pebbly roads: would he walk comfortably and soundly?"

Concerning the use of the frog, there exists much disagreement of opinion among those who are supposed to know all that is worth knowing about the equine structure. Fleming, in his "Practical Horse-Shoeing," — a book of value to the student of this subject, — thus describes the frog: —

"The *horny frog* is an exact reduplication of that within the hoof, described as the *sensitive* or *fatty frog*. It is triangular, or rather pyramidal, in shape; and is situated at the back part of the hoof, within the bars, with its point, or apex, extending forward to the centre of the sole, and its base, or thickest portion, filling up the wide space left between the inflections of the wall. In the middle of the posterior part is a cleft, which, in the healthy state, should not be deep, but rather shallow, and sound on its surface.

"In structure, this body is also fibrous, the fibres passing in the same direction as those of the other portions of the hoof; but instead of being quite rectilinear, like them, they are wavy or flexuous in their course, and present some microscopical peculiarities, which, though interesting to the comparative anatomist, need not be alluded to here. The fibres are finer than those of the sole and wall, and are composed of cells arranged in the same manner as elsewhere in the hoof: they are formed by the *villi* which thickly stud the face of the membrane covering the sensitive frog.

"The substance of the horny frog is eminently elastic, and corresponds in the closest manner to the dense, elastic, epidemic pads on the soles of the feet of such animals as the camel, elephant, lion, bear, dog, cat, &c., and which are evidently designed for contact with the ground, the support and protection of the tendons that flex the foot, to facilitate the springy movements of these creatures, and for the prevention of jar and injury to the limbs.

"In the horse's foot, the presence of this thick, compressible, and supple mass of horn at the back of the hoof, its being in a healthy, unmutilated condition, and permitted to reach the ground while the animal is standing or moving, are absolutely essential to the well-being of that organ, more especially should speed, in addition to weight-carrying, be exacted."

The frog serves several uses, and is a most important organ. Lafosse, in 1754, wrote, —

"The frog is composed of soft and compact horn, spongy and elastic in its nature, and serves as a cushion to the tendon Achilles. It ought to bear fully on the ground, as much for the facility as for the safety of the horse when in movement. It is," he adds, "the natural *point d'appui* of the flexor tendon." Some have supposed that another use of the frog was to expand the heels of the foot. They have an idea that it acts like a wedge driven in between the bars of the foot, and that, at every shock it receives when brought in contact with the ground, it is driven home,

as it were, causing the bars and wall of the hoof to expand laterally. This "lateral-expansion" theory is at variance with my opinion.

Practically there can be no lateral expansion of the horny substances of the foot. Much less likely is it that a soft, yielding, elastic substance like the frog could overcome the resistance of dense, solid, inelastic substance such as composes the walls, bars, and sole of a horse's foot. I do not say that by artificial processes, such as sawing and cutting and boring, the walls of the hoof cannot be laterally expanded, without the employment of any great degree of skill, either; for it requires no great effort for a strong, able-bodied man to saw the leg off at the knee-joint, or where it makes its junction with the body, for that matter. A knife and saw in the hand of a hobbyist can do most any thing. I think that fifty dollars is a high price for *sawing* open a horse's foot; although some differ from me, and hold it to be astonishingly cheap. In this way, lateral expansion can indeed be gotten; but in no other way. It is this "lateral-expansion" theory which has been a source of torture to the horse. In order to accommodate its claim, soles have been pared away until the blood trickled; bars dug out until not the least trace of them remained; Nature's cushion — the frog — been shaved down until only a little line and fragment of it was left; heels wedged open with forcible pressures, and even lacerated with the teeth of a saw: and the edge of the satire is felt only when we remember

that the theory is a humbug; that lateral expansion is a thing that does not exist in the hoof of a horse, and could not exist without imperilling its entire service. The inference from what we have said is this (and it would be well if every reader would accept it as a law in shoeing): Never allow the knife to touch the sole of your horse's foot, nor the least bit of it be pared away; because Nature needs the full bulk of it, and has amply provided for its removal at the proper time, without assistance from you. And, secondly, never allow a knife to be put to the frog; because Nature never provides too much of it to answer the purpose for which the Creator designed it; and the larger it is, the more swiftly, easily, and safely will your horse go.

The bars of the foot are but the prolongation of the outer wall of the hoof. Their object is to protect the frog, and strengthen the foot itself. Their value in this direction can scarcely be over-estimated. To cut them away is like removing the beams that keep the walls of a house from falling outward or crushing inward. If a healthy foot is placed upon a glass stand, it will be seen that the ground-surface of the wall, bars, and frog, all bear the relative proportion of weight. These might be called the three great pillars on which the body of the horse, like some dome upheld by three columns, stands. To shorten or remove two of these three columns is, of course, fatal. The dome is of such weight as to crush the sole

remaining support. This is precisely the condition of things under the common vicious system of shoeing. The bars are cut away so that they cannot touch the earth; the frog is pared down the same way; the sole, also, is gouged out: and the result is, that nothing is left but the wall of the hoof to support the vast bulk and weight above. When you remember that the wall is very thin, — scarcely half an inch in thickness where it touches the ground, — you will share with me the surprise, not that so many horses "pound their feet up" and break down, or "give out in their feet" as the saying is, but that any horses survive at all. The true way is to let every thing grow, and grow to the fullest extent that Nature designs it to reach: and, in shoeing, seek only to protect from too rapid destruction what Nature has put together; least of all cut away that which Nature has provided so abundantly, and more efficiently than the art and skill of man can ever hope to effect. And this brings me to the preparation of the foot for the shoe.

The only preparation that the frog, bars, and sole require in a healthy, natural foot, as we have shown, is to be let alone. The only portion of the foot that need be or should be touched is the ground-surface of the wall. This should be levelled with knife or rasp (better with the rasp than with the knife, as we think) until the proper angle which the hoof should make with the ground has been reached; and this is all. This angle of the ground-surface is apt to be unattended to. The

angle which is generally given is that of 45°: but this is evidently wrong; and our wonder is that any one should have suggested or indorsed it. In speaking of this angle, Fleming says, —

"It will be obvious that this inclination also varies with the breeding of the animal and the conformation of the limbs, so that no definite degree can be assigned. But it must be pointed out, that giving the angle of 45°, as is done in almost every treatise on shoeing and the anatomy of the foot, is a grave error. Looked at in profile, a hoof with this degree of obliquity would at once be pronounced a deformity. The slope is too great (Fig. 1); and, if the farrier were to attempt to bring every foot he shod to this standard, he would inflict serious injury, not only on the foot itself, but also on the back-tendons and the joints of the limbs. Careful measurement will prove that the obliquity of the front of the hoof is rarely, if ever, in a well-shaped leg and foot, above 50°; and that it is, in the great majority of cases, nearer 56°. The sides, or 'quarters,' of the wall, are less inclined, though the outer is generally more so than the inner; while the heels are still more vertical, and the inner may even incline slightly inward. Viewed in profile, the posterior face of the hoof will be observed to have the same degree of slope as the front face. In height, the heels are usually a little more

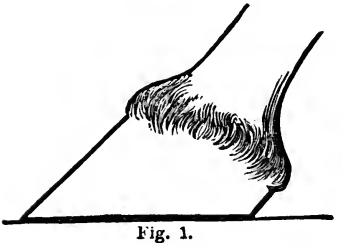


Fig. 1.

than one-half that of the toe. Both heels are equal in height."

Generally speaking, the toes are left too long. It should be remembered that it is the front portion of the foot that would be most worn, were it not protected by the shoe; and, owing to this fact, feet with projecting toes would never occur in nature. The length of the human foot could not be materially increased without greatly incommoding us when walking or running; and so, when the front of the horse's hoof is allowed to protrude as we often see it, he labors under great inconvenience, and possibly pain, when in motion. The suggestion of Nature is, that the toe should be kept duly shortened, the front edge of the shoe drawn a little back from the rim of the wall, and rounded, so that the metal will take the shape which the hoof would have if the wall were undefended with metallic covering, and exposed to the friction at every spring.

I propose, at this point, to quote at length from a treatise, on the same subject of which we are treating, by Lafosse, a French veterinarian and author, who wrote in the first half of the eighteenth century, and from whose works more ideas have been taken, without any acknowledgment, by the writers of the last fifty years on the horse's foot, than from any other author in any branch of literature that I can recall. Lafosse, according to my judgment, is the wisest man who ever wrote upon the subject. Indeed, no considerable improvement has been made, as I think, in what he wrote in regard to the

horse's foot, and how to treat it. Men have stolen from him right and left. His works have been the great thesaurus from which literary thieves have filched their boasted opinions. Even his errors they have adopted, and given him no credit for them! Principles which he discovered, believed in, published, and afterwards disproved and threw overboard, they have taken, put into a metallic shape, patented, and advertised them to the world as new discoveries. At the feet of this wise teacher I sit gladly as a pupil; and I feel that I can do no greater service to the horsemen of America than to introduce into these pages certain portions of his works. At one point, he is speaking of the errors embodied in the then system of shoeing; and his words are applicable unto us of this day. I cannot do better than to transcribe numerically some of the points he makes. He says, —

"1. Long shoes, thick at the heels, never remain firmly attached to the feet in consequence of their weight, and break the clinches of the nails.

"2. They require proportionately large nails to retain them; and these split the horn; or, frequently, their thick stalks press against the sensitive laminæ and sole, and cause the horse to go lame.

"3. Horses are liable to pull off these long shoes when the hind-foot treads upon the heel of the fore-shoe, either in walking, while standing, by putting the one foot upon the other, between two paving-stones in the pavement, between the bars of gates, in the draw-bridges of fortifications, or in heavy ground.

"4. They move heavily, as the weight of their shoes fatigues them.

"5. Long shoes with massive heels raise the frogs from the ground, and prevent the horse walking on those parts. Then, if the horse has a humor in the frog, it becomes a ficthrush, or *crapaud* (canker), because the humor lodges there. In shoeing with short shoes, the horse goes on his frog; the humor is dissipated more easily, particularly in the fore-feet, as the animal places more weight upon them than the hind ones.

"6. Long shoes, thick at the heels, when put upon feet which have low heels, bruise, and bend them inwards, and lame the horse, although the heel be sprung; and, when the foot is raised, we can see daylight between the shoe and the hoof. When it is on the ground, the heel descends to the shoes, because the hoof is flexible.

"7. Shoes long and strong at the heels, when the foot is pared, — the frog being removed a long distance from the ground, — cause many accidents; such as the rupture or straining of the flexor tendon, and compression of the vascular sole, — a circumstance not known until I pointed it out.

"8. Long shoes cause horses to slip and fall, because they act like a patten on the slippery pavement, as well in summer as in winter.

"9. Long shoes are also injurious when horses lie like a cow, in consequence of the heels wounding the elbows.

"10. Calkins should not be used on paved roads: they are only useful on ice or slippery ground, — *terre grasse.*

"11. The calkins on the inside heels are liable to wound the coronets when the horse happens to cross his feet.

"12. A horse shod with them is soon fatigued, and never goes easy.

"13. The horse which has only a calkin on the outside does not stand fair; and the calkin confines the movement of the coronary articulation, the foot being twisted to one side.

"14. If a horse has his feet pared, and loses a shoe, he cannot travel without breaking and bruising the wall, and damaging the horny sole, because the horn is too thin to protect it.

"15. If the shoes are long, and the heels of the hoof pared out hollow, stones and pebbles lodge between the shoe and the sole, and make the horse lame.

"16. Flat feet become convex by hollowing the shoes to relieve the heels and the frog, because, the more the shoes are arched from the sole, the more the wall of the hoofs is squeezed and rolled inwards, particularly towards the inner quarter, which is the weakest. The sole of the foot becomes convex, and the horse is nearly always unfit for service.

"17. If the wall of the hoof is thin, and the shoes are arched, the quarters are so pressed upon, that the horse is lame.

"18. Pared hoofs are exposed to considerable injury from wounds by nails, stones, glass, &c.

"19. The pared sole readily picks up earth or sand, which forms a kind of cement between it and the shoe, and produces lameness.

"20. The reason why it is dangerous to pare the feet of horses, is because, when the sole is pared, and the horse stands in a dry place, the horn becomes desiccated by the air which enters it, and removes its moisture and its suppleness, and often causes the animal to be lame.

"21. A habit to be abolished is that in which the farrier, to save trouble, burns the *sole* with a hot iron, so as to pare it more easily. The result, often, is to heat the sensitive sole, and cripple the horse.

"22. It often happens, that, to make the foot pleasant to look at, the horn of the sole is removed to the quick; and the flesh springs out from it. This granulation is called a 'cherry;' and sometimes it makes the horse unserviceable for a considerable period.

"23. It is the pared foot which is most affected with what is termed contracted or weak inside quarter, and which also lames the horse.

"24. It also happens that one or both quarters contract, and sometimes even the whole hoof: then, in consequence of its smallness, all the internal parts are confined in their movements. This lames the horse, and is due to paring.

"25. There also occurs another accident. When the quarter becomes contracted, the hoof splits in its lateral

aspect. This accident is termed 'a sand-crack,' — *seime*, — and the horse is lame.

"26. The fashion of paring the hoofs, and especially the heels, within which are the bars, causes contraction; and this renders the horse lame.

"27. It is an abuse to rasp the hoofs of horses: this alters the hoof, and forms sand-cracks.

"28. If a horse which has pared hoofs happens to lose his shoes, and walks without them, the horn is quickly used, and the feet damaged.

"29. Another defect is in the manner of making large nail-holes in the shoes, &c.

"30. The majority of farriers, in order to pare the sole well, cut it until it bleeds; and, to stop the hemorrhage, they burn the place with a hot iron, and the horse returns lame to his stable."

In reference to this, Fleming says, —

"We see, then, that the curse of paring and heavy shoes was causing great evils in the days of Lafosse, as much as in our own. After enumerating all the vices and defects of shoeing as it was then practised, he proceeds to lay the foundation for a rational method; and his remarks to this end are particularly happy. In a state of nature, he observes, all the inferior parts of the foot concur to sustain the weight of the body: then we observe that the heels and the frogs — the parts said to be most exposed — are never damaged by wear; that the wall, or crust, is alone worn in going on hard ground; and that it is only this part which must be protected,

leaving the other parts free and unfettered in their natural movements. These are the true and simple principles of good farriery he lays down; and they are as appropriate and explicit to-day as they were then."

Lafosse goes on to say, —

"To prevent horses slipping on the dry, glistening pavement, — *pavé sec et plombé*, — it is necessary to shoe them with a crescent-shaped shoe, — that is, a shoe which only occupies the circumference of the toe, and whose heels gradually thin away to the middle of the quarters, — so that the frog and heels of the hoof bear on the ground, and the weight be sustained behind and before, but particularly in the latter, because the weight of the body falls heaviest there. The shorter the shoe is, the less the horse slips; and the frog has the same influence in preventing this that an old hat placed under our own shoes would have in protecting us from slipping on ice.

"It is necessary, nevertheless, that hoofs which have weak walls should be a little longer shod, so that the gradually thinning branches reach to the heels, though not resting upon them. For horses which have thin, convex soles, — *pieds combles*, — these long shoes should be also used; and the toes should be more covered to prevent the sole touching the ground: at the same time, the shoe must be so fitted that it does not press upon the sole, and the heels and frog rest upon the ground. This is the only true method of preserving the foot, and restoring it. . . . A horse which has its heels weak and

sensitive ought to be shod as short as possible, and with thin branches, — *éponges*, — so that the frog comes in contact with the ground; because the heels, having nothing beneath them, are benefited and relieved (Fig. 2).

Fig. 2.

"Crescent shoes are all the more needful for a horse which has weak, incurvated quarters, as they not only relieve them, but also restore them to their natural condition. Horses which have contusions at the heels — *bleimes*, corns — should also be shod in this manner; and for cracks — *seimes*, sand-cracks — at the quarter it is also advantageous. *The sole, or frog, should never be pared:* the wall alone should be cut down, if it is too long. When a horse cuts himself with the opposite foot, the inner branch of the shoe ought to be shorter and thinner than the outer. In order that the shoe wear a long time, I have used a nail of my invention, the head of which is in the form of a cone, and the aperture in the shoe of the same shape, and exactly filled by the nail. However much the shoe may be worn, it is always retained in its place. This kind of nail (Fig. 2) possesses three other advantages: one, that it is less liable to be broken at the neck, because it exactly fits the stamped hole; the other, that it is smaller, and, in consequence, not likely to press on the sensitive part of the foot; and, lastly, that it does less damage to the horn.

"By this new mode of shoeing, all the defects and accidents attendant upon the old method are evaded."

In another place he gives directions for shoeing good hoofs on horses kept for general service, as follows: —

"The shoes must not be too long, or project beyond the heels, but only reach the bars; neither must the hoofs, behind or before, be pared. The wall, or crust, alone should be diminished in proportion as it may be too long. This should be done evenly; and neither the sole nor frog must be cut: the latter should be allowed to project, if possible, above the shoe, so that it may come into contact with the ground. The shoe ought to be about the same strength throughout, or a little thicker and wider in the outer branch of the fore-foot, and thin at the heels of the hind one. Be careful to stamp the nail-holes on the same line, not in a zigzag manner. The holes should not be too coarse, as there is then danger of pricking the horse, or binding the hoof with the stalk of the nail. The shoe should be stamped coarser outside than inside, because it may be necessary to leave it wider outside. Do not bend the shoes in adjusting them, nor arch them: they ought to be nearly flat; though they might be slightly curved, so as to preserve the wall of the hoof. They should also follow the outline of the hoof, — a little more to the outside than the inside. When fitting, the shoe should not be kept too long a time on the hoof, for fear of heating it. With this shoeing we may travel on slippery ground or grass land, in using for each

shoe two nails with long heads, which will prevent the horse from slipping. Also during frost, on paved roads, or ice or snow, use these nails, as they prevent slipping: the roads being hard, three nails are required, — two in the outer branch, and one in the inner."

Reverting to the defective shoeing of his time, he endeavors to demonstrate, that, by removing the horn of the frog, and points of the heels, from the ground, the animal's footing on paved roads is much less secure.

"The draught-horse," he says, "first places his weight on the toe, then on the two sides of the hoof; and afterwards the heels are lowered to meet the heel of the shoe. The saddle-horse rests more lightly on the toe. The canon (or shank-bone) presses on the pastern-bone, this on the coronary, and this again on the coffin and navicular bones. From this disposition, we should note two important points which throw light on the defects of the present method, and indicate how to remedy them: one is, that the strain of the weight is neither fixed on the toe nor heel, but between the two; the other, that the more the frog is removed from the ground, or from any point of support, the more the pressure of the coronary on the navicular bone fatigues the tendon on which it rests, in consequence of the excessive extension it experiences at each step the horse takes. The frog ought, therefore, to rest on the ground, as much for the facility as for the surety of the horse's movements; as the larger the

frog is, so the less do the heels meet the ground; and the more the heels are relieved, the greater ease does the horse experience in progression. The only way to insure this is to shoe him according to the method I have indicated, as this causes him to walk on his frog, which is the natural prop or basis — *point d'appui* — for the flexor tendon."

Fleming, in quoting this passage from Lafosse, says, —

"The whole aim of Lafosse's teaching appears to have been wisely devoted to the importance of allowing the posterior parts of the foot to rest on the ground without the intervention of the shoe."

Again we select from Lafosse's work: —

"It is useful and even necessary to put short shoes on all flat feet, particularly on those which have the form of an oyster-shell. Every flat foot has low heels; but Nature, to remedy this defect, bestows a large frog to preserve these parts. We ought not, then, to pare the soles, much less cut them out towards the heels; neither should the hoofs be too much rasped: all these practices are so many abuses which bring about the destruction of the horse's feet. The first abuse — hollowing out the heels — is to destroy the horn which forms the bars, and prevents the heels and quarters from contracting: the second abuse — rasping the foot — is to destroy the strength of the hoof, and, consequently, to cause its horn to become dry, and the horny laminæ beneath to grow weak: from this often

arises an internal inflammation, which renders the foot painful, and makes the horse go lame.

"It ought to be always remembered, that the more a horse's foot is pared, so the more do we expose it to accidents. It is depriving it, in the first place, of a defence that Nature has given it against the *hard* and *pointed* substances it encounters; and in the second place, — and which is of the utmost advantage for both horse and rider, — in not paring the sole, and only using as much of a shoe as is necessary to protect the horn, the animal will be no longer liable to slip on bad roads in winter or summer, when they are vulgarly called *plombé*, as will be shown.

"1. Causing a horse to walk on the frog, and partly on the heel, the former is found to be rasped by the friction it experiences on the earth and paved road, and is pressed by the weight of the body into the little cavities and interstices it meets.

"2. By its flexibility, it takes the imprint and the contour, so to speak, of the ground it comes into contact with; so that the foot rests on a greater number of parts, which, mutually assisting each other, multiply the points of support, and thereby give the animal more adherence to the surface on which he moves. We may even say that he acquires a kind of feeling in this part, through its correspondence with the fleshy sole, and from this to the tendon, — a feeling that I will not compare with that we experience when we walk with naked feet, but which is yet sufficient to warn him of the

counterpoise he ought to give to his body to maintain its equilibrium, and so preserve him from falling, twisting, or stumbling.

"The object of shoeing, by him who first resorted to it, would only be as a preservative and a defence, as much for the wall as for the sole. But he would not add the condition of paring either the one or the other, I do not say to our excess, but in any way whatever; because this would be contrary to his principle, and would destroy his work.

"This precaution (paring) can only be recommended in cases where the horn is rugged, and the shoe does not rest on it everywhere equally, thus opposing its solidity. In such a case it is right; but otherwise it is a contradiction and an absurdity. I have often questioned those amateur horsemen who were particularly careful to have their horses' feet pared; but none of them could demonstrate either its necessity or propriety. . . . The horny sole receives its nourishment from the vascular sole: its softness and pliancy are due to its thickness; and its nourishment is diminished, while it becomes harder, in direct proportion to the thinness we give it. We even see horses, whose soles are pared, habitually lame. The air, when the sole is in this state of thinness, penetrates and dries it to such a degree, that, if care is not taken to keep it damp when the animal is in a dry place, it contracts, and presses on the vascular sole; so that, if some time after we wish to pare the sole again, it is not possible to do so, because it is so

hard and dry that the *boutoir* will not touch it, and the horse goes lame. . . . What risk does a horse not incur who has nearly been deprived of his soles through this paring! If he encounters stones, broken glass, or nails, these easily penetrate to the sensitive sole, and cripple him for a long time, if not for ever.

"When a horse loses a shoe,—a circumstance frequently occurring,—and if the hoof is pared, the animal cannot walk a hundred steps without going lame; because, in this state, the lower surface of the foot being hollowed, the horse's weight falls on the crust; and this, having no support from the horny sole, is quickly broken and worn away; and, if he meets hard substances on the road, he all the more speedily becomes lame. It is not so when the sole is allowed to retain its whole strength. The shoe comes off; but the sole and frog rest on the ground, and assist the crust in bearing the greater part of the weight of the body; and the animal, though unshod, is able to pursue his journey safe and sound.

"It is a fact, that every horse, except those which have the feet diseased and soles convex, and to which shoes are necessary to preserve the soles, may travel without shoes: and without going for an example to the Arabs, Tartars, &c., we will find it among our own horses, which, in the country, work every day without requiring shoes; but as soon as our wisdom and skill are brought to bear in hollowing out the foot to the quick, and making a fine, equal, and symmetrical frog,—doing

it well and properly, as we say in France, — shoes become indispensably necessary.

"I therefore ask all amateur horsemen to insure their horses as much as they can against this pretended perfection. It may be asked, What will become of the horny sole if it is never pared? and it may be feared, that, by its growth, the foot will become overgrown. Not at all; for, in proportion to its growth, it dries, becomes flaky, and falls off in layers.

"The compressions so dangerous, which cause inflammation, would no more be dreaded if we left the horn of the sole, the bars, and the frog, entire. By their pliability, thickness, flexibility, texture, and the situation they occupy, they appear to be solely destined by Nature to serve as a defence to the vascular sole, as the frog particularly acts as a cushion to the tendon Achilles; all being disposed to obviate shock on paved roads, or injury from a stone, splinter, &c.

"It is necessary to be convinced of another fact: this is, that it is rare that a horse goes at his ease, and is not promptly fatigued, if the frog does not touch the ground. As it is the only point of support, if you raise it from the ground by paring it, there arises an inordinate extension of the tendon, caused by the pushing of the coronary against the navicular bone, as has been mentioned above, and which, being repeated at every step the animal takes, fatigues it, and induces inflammation. From thence often arises the distention of the sheaths of tendons (*molettes; vulgo*, 'windgalls'),

engorgements, and swelling of the tendons, &c., that are observed after long or rapid journeys. These accidents arise less from the length of the journey, as has been currently believed, than from the false practice of paring the sole.

"I am astonished that this method of shoeing has not been employed long ago; and I have much trouble in persuading myself that I am the inventor. I am more inclined to believe that it is only a copy of that which has been practised by the first artist who thought about shoeing horses.

"If my suspicions are correct, the oblivion into which it has fallen proves nothing against its perfection, because the good as well as the bad are alike liable to be forgotten. The multitude, more credulous than enlightened, are easily persuaded: hence the long, thick shoes, those with calkins, then with thick heels, and afterwards the thin. There is every reason to believe, that, if the poor animals for whom all this has been done could be allowed to speak as they must think, nothing of the kind would have taken place, and they would have preferred their ancient armature, which, having only been designed to preserve the crust, had certainly none of the inconveniences of that employed now-a-days."

Fleming, at the close of his review of Lafosse, says, —

"Lafosse's experience of this admirable mode of protecting, while preserving, the foot, was derived from a

trial of its advantages on more than eighteen hundred horses; and his success was most astonishing, though no more than might, on reflection, be anticipated."

Lafosse goes on to observe, —

"These short shoes, thin at the heels, have caused the horses to walk on their frogs, which are their points of support; and those which were lame at the heels are sound again; those also whose inside quarters were contracted, bent over, and split (sand-crack), have been cured. It has been the same with horses whose quarters and heels have been contracted (*encastelé*): these have been widened, and have assumed a proper shape. The same may be said of those whose soles were convex (*comblé*), and which went lame with long shoes. My method has also preserved those horses which had a tendency to thrush (*vulgo, fic*) and canker of the frog (*crapaud*).

"If the horse be shod with calkins, there is a great space between the frog and the ground; the weight of the body comes on the calkins; the frog, which is in the air, cedes to the weight; the tendon is elongated; and, if the horse makes a violent and sudden movement, the rupture of that organ is almost inevitable, because the frog cannot reach the ground to support it in the very place it ought to; and, if the tendon does not break, the horse is lame for a long time from the great extension of the fibres, some of which may have been ruptured. . . . If the horse be shod without heels to his shoes (*éponges*), the frog, which carries all the weight

of the horse's body, yields at each step, and returns again to its original form. The tendon is never in a state of distraction: its fibres are no longer suceptible of violent distention during a sudden movement. I will go so far as to assert that rupture of the tendon will never occur on a flat pavement: if it does, it will be in the space between two paving-stones. Two things clearly follow from what I have said, — that it may happen that the tendon Achilles sustains all the different degrees of violence that can be imagined, from total rupture to the smallest abrasion of its fibres, which will cause the horse to go lame; and it is on the frog alone that all these different degrees depend, as has been demonstrated more particularly in the history of fracture of the navicular bone and the anatomy of the foot. My new shoeing, I repeat, has nothing to oppose it but prejudice. Anatomy, which has made known to me the structure of the foot, has demonstrated all its advantages, and experience has fully confirmed them."

Fleming, who quotes essentially the same as the foregoing, well says, at the conclusion of the quotation, —

"I regret extremely that our limits forbid my translating at greater length from this splendid monograph; but I hope that I have been able, to some extent, to show that Lafosse's ideas on shoeing were founded on sound anatomical and physiological principles, the result of close observation and experience. And yet they appear to have made but little progress in the face of the

opposition offered by ignorant grooms and farriers, who were incompetent to understand any thing but the mere every-day routine of the rapidly-degenerating art; and the prejudice of those amateur horsemen, who, though the last perhaps to take upon trust statements relative to other matters, would yet believe every thing told them by these horse attendants and shoers. The farriers of Paris, indeed, unanimously protested against the innovation two years after Lafosse had published his treatise; and their protest appears to have carried the mind of the crowd."

I presume that the same experience will be met in case of those authors, who, like myself, seek to bring forward these wise and salutary principles in farriery. I fear that popular ignorance, stupidity, and wilfulness will resist the introduction of all improvement in this matter; and, for a while longer, man and horse will continue to suffer. I am inclined, in this connection, to quote from W. Osmer's "Treatise on the Diseases and Lameness of Horses" (London, 1776). After warning farriers not to remove any thing more of the crust or wall of the hoof than is absolutely necessary, he says, —

"In all broad, fleshy feet, the crust is thin, and should, therefore, suffer the least possible loss. On such feet the rasp alone is generally sufficient to make the bottom plain, and produce a sound foundation, *without the use of the desperate buttress.* . . .

"The superficies of the foot round the outside now made plain and smooth, the shoe is to be made *quite*

flat, of an equal thickness all round the outside, and open and most narrow backwards, at the extremities of the heels, for the generality of horses. Those whose frogs are diseased, either from natural or incidental causes, require the shoe to be wider backwards; and, to prevent this flat shoe from pressing on the sole of the horse, the outer part thereof is to be made thickest, and the inside gradually thinner. In such a shoe the frog is admitted to touch the ground, the necessity of which has been already shown: add to this, the horse stands more firmly on the ground, having the same points of support as in a natural state. Here, now, is a plain, easy method, agreeable to common sense and reason, conformable to the anatomical structure of the parts, and therefore to the design of Nature, — a method so plain, that one would think nobody could ever swerve from it, or commit any mistake in an art where nothing is required but to make smooth the surface of the foot, to know what loss of crust each kind of foot will bear with advantage to itself, and to nail thereon a piece of iron adapted to the natural tread of the horse; the design, good, or use of the iron being only to defend the crust from breaking, — *the sole wanting no defence, if never pared.* . . .

"The modern artist uses little difference in the treatment of any kind of foot, but, with a strong arm and a sharp weapon, carries all before him, and will take more from a weak-footed horse at one paring than Nature can furnish again in some months, whereby such

are rendered lame. If a strong-footed horse, with narrow and contracted heels, be brought before him, such meets with treatment yet more severe. The bar is scooped out, the frog trimmed, and the sole drawn as thin as possible, even to the quick, under pretence of giving him ease, because, he says, he is hot-footed, or foundered; by which treatment the horse is rendered more lame than he was before."

Fleming, in quoting Osmer, observes, —

"This causes contraction of the hoof, and compression of the parts within; and, besides, a shoe was applied thin on the outer circumference, and thick on the inner, which being concave to the foot, and convex to the ground, afforded but few points of support, removed the frog from pressure, and caused great mischief. I possess some specimens of this terrible instrument of last-century barbarism. It almost makes one shudder to think of the fearful agony the poor horses must have suffered when compelled to wear and work with it."

Osmer concludes: "Let the shoe on every horse stand wider at the points of the heels than the foot itself: otherwise, as the foot grows in length, the heel of the shoe in a short time gets within the heel of the horse; which pressure often breaks the crust, and produces a temporary lameness, perhaps a corn. Let every kind of foot be kept as short at the toe as possible (so as not to affect the quick); for, by a long toe, the foot becomes thin and weak, the heels low, and the flexor tendons of the leg are strained. The shortness of the toe helps,

also, to widen the narrow heels. In all thin, weak-footed horses, the rasp should be laid on the toe in such a manner as to render it as thick as may be; by which means the whole foot becomes gradually thicker, higher, and stronger. In all feet whose texture is very strong, the rasp may be laid obliquely on the fore-part of the foot, towards the toe, and the toe itself thinned, whereby the compression on the parts is rendered somewhat less by diminishing the strength of the hoof, or crust.

"But this rasp is to be used with discretion, lest, the crust being too thin, and not able to support the weight of the horse, a sand-crack ensue; which frequently happens from too free or unskilful use of this tool, and from the natural rigid texture of the coronet. The heel of the shoe on all strong and narrow-heeled horses should be made straight at the extreme points; the form of the shoe in some measure helping to distend the heel of the horse. For the same reason, the shoe on no horse should be continued farther than the point of the heel. It has been already said, that neither frog nor sole should ever be pared: nevertheless, it must be understood that it is impossible to pare the crust without taking away some of the adjacent sole; and it is also requisite — in order to obtain a smooth and even surface — so far as the breadth of the shoe reaches, and no farther. The frog, also, will become ragged; and loose pieces will occasionally separate from the body thereof, perhaps in one foot, and not in the other.

When this happens, it should be cut away with a knife, to prevent the gravel lodging therein; but, if it be left to the artist to do, he will be sure to take away more of it at one time than will grow again in many weeks."

Some twenty years after Osmer published his protest against treating the horse's foot as if it were a block of wood on which a man could hack and hew and cut away at pleasure, Mr. J. Clark published a treatise upon farriery, in which he says, —

"However necessary it has been found to fix iron shoes upon the hoofs of horses, it is certainly contrary to the original design of shoeing them, first to destroy their hoofs by paring, &c., and afterwards to put on the foot a broad, strong shoe to protect what remains, or rather to supply the defect or want of that substance which has been taken away. Yet, however absurd this manner of treating the feet of horses may appear, it is well known that it has been carried to a very great length, and still continues to be thought absolutely necessary. The destruction of their hoofs, and many other bad consequences arising from it, are every day but too apparent."

And also this, which might be regarded as descriptive of the state of things: —

"But no apology whatever can vindicate that pernicious practice of cutting and paring their hoofs to that excess which is but too frequently done every time a horse is shoed, and, in order to repair the injury done to

the foot, fix on it a strong, broad-brimmed shoe, from the very construction of which, together with the loss of its natural defence, horses too frequently are rendered totally useless. . . . In preparing the foot for the shoe, the frog, the sole, and the bars, or binders, are pared so much, that the blood frequently appears. The shoe, by its form, — being thick on the inside of the rim, and thin upon the outside, — must, of consequence, be made concave, or hollow, on that side which is placed immediately next the foot, in order to prevent its resting on the sole. The shoes are generally of an immoderate weight and length; and every means is used to prevent the frog from resting upon the ground by making the shoe-heels thick, broad, and strong, or raising cramps, or calkins, on them. From this form of the shoe, and from this method of treating the hoof, the frog is raised to a considerable height above the ground; the heels are deprived of that substance which was provided by Nature to keep the crust extended at a proper wideness; and the foot is fixed, as it were, in a mould. . . . If we attend further to the convex surface of this shoe, and the convexity of the pavement upon which horses walk, it will then be evident that it is impossible for them to keep their feet from slipping, especially upon declivities of streets. It is also a common practice, especially in this place, to turn up the heels of the shoes into what is called cramps, or calkins, by which means the weight of the horse is confined to a very narrow surface, — the inner round edge

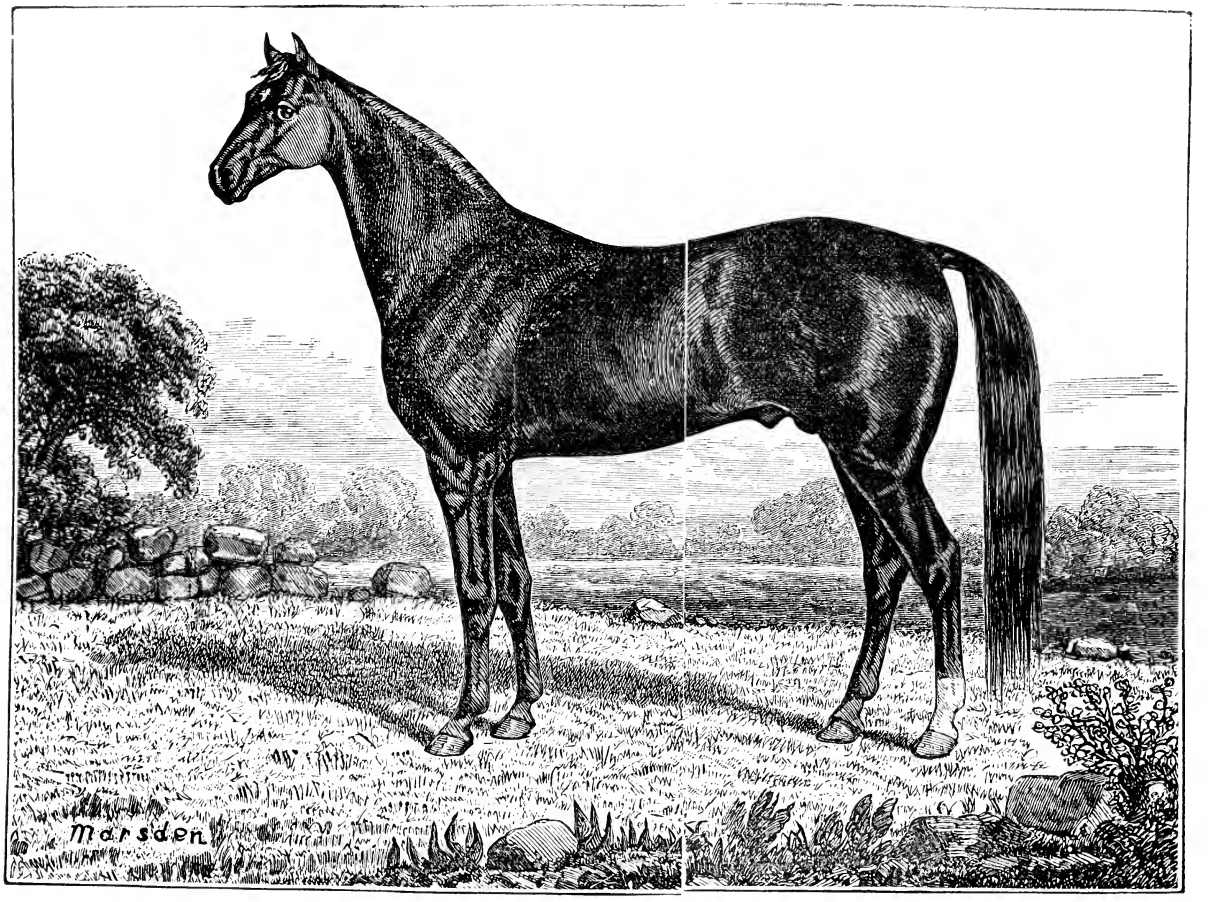
of the shoe-rim, and the points, or calkins, of each heel. The consequence is, that it throws the weight of the body forward upon the toes, and is apt to make the horse slip and stumble.

"Farriers, in general, are too desirous to excel one another in making what is termed fine, neat work; and that is no other than paring the sole till it yields easily under the pressure of the thumb: and, to give the frog a fine shape, it is frequently pared till the blood appears; to prevent the effusion of which, the actual cautery is sometimes applied. It is to be observed, that, when the sole is so much pared, it dries and hardens in proportion as it is thinned; and the strong, horny substance of the crust, overcoming the resistance from the sole, is thereby contracted. This will produce lameness, the real cause of which is overlooked, or little attended to. Among the many disadvantages that attend the common shoes, one is their being more liable to be pulled off, from their great weight, length, &c., especially in deep ground, in riding fast, or when the toe of the hinder foot strikes against the heel of the fore-shoe. To prevent this inconvenience, *sixteen or eighteen nails* are frequently made use of, which destroy and weaken the crust by their being placed too near one another; and it is not uncommon, when a shoe nailed in this manner is pulled off, that the crust on the outside of the nails breaks away with it. If this should happen a few days after the foot has been so finely pared (which is not unusual), or upon a journey, and at a distance from any place

where a shoe may be immediately procured, the horse instantly becomes lame from the thinness of the sole and weakness of the crust, and is hardly able to support the weight of his own body, much less that of his rider."

This, also, must have been prophetic in its application to our times: —

"So much are farriers, grooms, &c., prejudiced in favor of the common method of shoeing and paring out the feet, that it is with difficulty they can even be prevailed upon to make a proper trial of it. They cannot be satisfied unless the frog be finely shaped, the sole pared, the bars cut out, in order to make the heels appear wide. This practice gives them a show of wideness for the time; yet that, together with the concave form of the shoe, forwards the contraction of the heels, which, when confirmed, renders the animal lame for life. In this flat form of shoe its thickest part is upon the outside of the rim, where it is most exposed to be worn; and, being made gradually thinner towards its inner edge, it is, therefore, much lighter than the common concave shoe, yet it will last equally as long, and with more advantage to the hoof; and, as the frog and heel are allowed to rest upon the ground, the foot enjoys the same points of support as in its natural state. It must, therefore, be much easier for the horse in his way of going, and be a means of making him surer-footed. It is likewise evident that from this shoe the hoof cannot acquire any bad form, when at the same time it receives every advantage that possibly could be expected from



FEARNAUGHT, JUN.—OWNED BY DAVID NEVINS, JUN.—See Page 468.

shoeing. In this respect it may very properly be said that we make the shoe to the foot, and not the foot to the shoe, as is but too much the case in the concave shoes, where the foot very much resembles that of a cat's fixed in a walnut-shell. . . . I would observe, upon the whole, that the less substance we take away from the natural defence of the foot, except on particular occasions which may require it, the less artificial defence will be necessary; the flatter we make the shoe, we give the horse the more points of support, and imitate the natural tread of the foot; therefore, the nearer we follow these simple rules, the nearer we approach to perfection in this art."

I have made these quotations — taken almost at random, from perhaps, on the whole, the three wisest teachers of the principles of correct shoeing and preservation of the horse's foot that the world has ever had — principally for the purpose of impressing those who could be impressed in no other way than by the accumulated testimony of other men with a sense of the great mischief and evil that is done in cutting and filing away the frog, sole, and bars of the horse's foot, by the retention of which, in a natural state, the foot can be kept either strong or healthy. No form of shoe can be so vicious as to do such mischief and injury to the foot as the present paring and cutting system; nor can any shoe be so good in its conformation as to remedy those ills that knife and buttress have occasioned.

The truth is, we should do little or nothing to the

horse's foot, save to level it for the reception of the shoe. Nature, it should be remembered, works after a perfect model, — for I am not speaking of disease, — and the perfect cannot be improved by any assistance from us. Were it not for the fact that our roads are too hard for the foot to endure service on them unprotected, it were well not to shoe at all; and, if we must shoe, shoe only so much as is absolutely necessary. The crescent shoe, or "tips" as they are commonly called, will, during the summer months, be sufficient for country service. These tips are thin, narrow plates of iron or steel, of some three ounces in weight, shaped to fit the toe of the foot, and to reach round a little on either side. The object of these tips is simply to protect the front portion of the foot from being too rapidly worn away. They leave the quarters, sole, frog, bars, and heels entirely unprotected, save as Nature provides. They are a most excellent form of shoe. I speak from experience, and not from theory alone. I have used horses of eleven hundred pounds weight, in farm-work and ordinary family service, on the road, for months together, with no protection to their feet save these tips, and found that their feet, which, at the beginning of the experiment, were in a most unsatisfactory condition, grew strong and well; and I recommend this form of shoeing to all my readers whose horses are exercised or worked in the country. Indeed, I am under the impression that the feet of many horses would need no other protection even

for city service. It is astonishing how fast the foot will develop and increase when once brought in contact with the ground. Take off those high-heeled shoes from your horse, friend, which you have caused to be put on him in order to keep his frog from the ground, and let it come in contact with the ground at every step. For a few days, or even for a few weeks, your horse may favor himself somewhat: but Nature will soon accommodate herself to the new liberty granted her; viz., the liberty of helping herself. She will soon build up a frog such as you never saw in your life, most likely; — a large, overlapping pad of gutta-percha-like substance, wide and thick, that feels no more the concussion, when brought in contact with the stone pavement, than the buffer under a rail-car feels the jolts as the train is being whirled along.

Now, in respect to the full shoe, the first error in common practice to be noticed is, that it is too wide and thick. The lighter the shoe the better, should be the rule. A horse is never so sprightly and pliant in motion, so unlikely to stumble, or swift in movement, as when enjoying the liberty of nature. There is no sense or reason for the heavy, wide-webbed, long-heeled shoes so common with us. These are the specific points of a good shoe, as I understand the matter: The shoe should be narrow, perfectly flat on the upper surface, — bevelled shoes are a nuisance, — light, thin at the heels, its ground-surface concave, and just as large as the foot. Such a shoe may be regarded as a model.

Fleming is altogether right in the following description when he says, —

"*Pattern of Shoe recommended.* — If the sole of the hoof has not been mutilated by the knife, it does not require to be covered by the shoe, as Nature has furnished an infinitely better protection. Wide-surface shoes can, therefore, be at once dispensed with; and a narrow shoe — made of the very best and toughest iron, adapted for travelling on slippery roads, and for aiding foot and limb, and sufficient to withstand wear for four or five weeks — is all that is required. We will therefore conclude that the upper or foot surface should be the whole width of the shoe, and plane, — not bevelled, — for we have seen that the sole was destined, particularly at its junction with the wall in front, to sustain weight. We also know that it is advantageous to the whole foot and limb to allow the sole as wide and general a bearing as possible, so that one part may relieve the other; the sole coming to the aid of the wall, and the frog interposing to share the fatigue imposed upon both, as well as to relieve the strain on the hinder-parts of the foot, flexor tendons, and limb, and keep a firm grasp of the ground by its elastic and adhesive properties.

"The shoe applied to the foot, then, should have its hoof-surface flat, in order that it may sustain the wall and as much of this strong portion of the sole as its width permits. This is contrary to the usual practice, which only allows the wall to rest on a narrow surface,

and bevels off the remainder of the shoe to prevent contact with the sole. Many years' experience of this plane foot-surfaced shoe in various regions of the globe, and on feet of every kind and quality, have proved the soundness of this view. The foot is brought as near to a state of nature, when the greater part of its plantar surface supports the weight of the body, as man can hope to achieve while submitting the horse to an artificial existence.

"A light, thin shoe is always preferable to a heavy, thick one; as the narrowness of the metal insures a good foothold, — in this respect imitating the wall, — while its thinness brings the sole, frog, and bars in closer approximation to the ground."

The upper surface of a shoe should be filed until it is perfectly level and smooth. This, so far as I am able, I invariably do for myself. A boot, the surface of which is not smooth, gives to the foot wearing it very much such a sensation as a coarsely-hammered-out shoe does to the foot of a horse when attached to it. It should never be nailed on to the hoof until it is smooth as glass. Such a shoe makes, in very truth, a good fit. The ground-surface should be bevelled off along the inner edge, thus imitating the convex surface-shape of the sole. The metal at the toe should be rounded off until the new shoe resembles at the toe the one taken off. This is doing to the shoes of horses what the manufacturer does to our shoes when he rounds them up at the toe. This facilitates the action of the

foot and limb, and, undoubtedly, accommodates Nature. I like to have my new shoes look at the toe like the old ones. What Nature has rounded off man ought not to make angular. As to the nails, five are enough; and these, if made of good material, can be of small size. Two should be put on the inside, immediately back of the toe, and three on the outside. This method of nailing leaves the foot at liberty to enjoy its elasticity. The nails should be turned out as quickly as possible. The holes made by them should never be more than half an inch up into the hoof. There are several reasons why a nail should not be driven high up. The first is, the higher it goes, the less thickness of wall is there to which to clinch it. The wall of the hoof, also, has a *grain* as truly as wood. Now, every one knows that a nail driven with the grain holds far less tenaciously than one driven across it; and it is this bringing-forth the point of the nail quickly which is compatible with its being driven across the grain of the hoof. A nail so driven holds on. Moreover, holes in horny substances never grow up: they always grow out or down. Now, the higher the hole that the nail has made is located in the wall of the hoof, the longer, of course, will the time be that is required to grow it down or out. This is no trifling consideration in the case where shoeing necessarily is frequent. Not only so, the multiplicity of holes greatly weakens the wall of the hoof, which, under our present faulty method of shoeing, has to bear up nearly the entire weight of the

horse, and is, therefore, never too strong at the best. In this connection, Mr. Fleming says, —

"The shoe ought to be attached by nails to those parts of the wall where the horn is strongest and toughest. In the fore-foot these parts are in front, and along the sides to the quarters: there the horn becomes narrow and thin; and the nails find less support, and are nearer to the living textures. This is more particularly the case toward the heels, especially the inner one. In the hind-foot the wall is generally strong toward the quarters and heel. These facts at once give us an indication as to the best position for the nail-holes. In the fore-foot, nails can be driven through the wall, around the toe, as far as the inside quarter, and a little nearer the heel on the outside. In the hind-foot they may be driven around the toe, and even up to the heels, with impunity."

This should be borne in mind, that, where few nails are used, they must be put wider apart. Some smiths drive their nails in clusters; and the result is, that a small section of the foot has to bear the entire strain. This the owner of every horse should guard against. My impression is, that the shoe should bear more heavily on the toe and heel, and less heavily on the quarters. I know the custom is to have the shoe set tight on the entire foot until you come to the heels; and then it is "eased," or left so that the heel does not set closely upon it. Now, my idea is that the quarter is the weakest point in the wall of the hoof; and hence the

shoe should be eased at that point, and not at the heel. This, I believe, would save many horses from quarter-crack. I suggest that the reader consider this, and then follow his own judgment. The nails, as I have said, should be quite small, and driven in more gently than is the custom. There is no reason why the smith should strike a blow at the little nail-head as strong as he would deliver at the head of a spike in an oak-beam. The hoof of the horse is not an oak-stick, and the delicately-pointed and slenderly-headed nail is not a wrought-iron spike; and yet you will see the nailer whack away at them as if it was a matter of life and death to get them entirely set in at two blows of his hammer. Insist that the nailer shall drive his nails slowly and steadily, instead of using violence. In this case, if his nail is badly pointed and gets out of the proper line of direction, no great injury is done. It can be withdrawn, and a new one substituted, without harm having been done the foot. But the swift, blind, and violent way prevents all such care, and exposes the horse to temporary if not permanent injury. The heads should be no larger than the groove, or notch, which receives them. If these are not large enough to be sunk in, then that portion of the head which protrudes should be rasped or filed down level with the shoe. Gentleness should be exercised in clinching the nail. Never allow a smith to touch a rasp to the outer surface of the hoof. Nature has covered it with a thin filament of enamel, the object of which is to pro-

tect the inner membrane and fibre from exposure to water or atmosphere. This enamel is exactly what Nature puts on to the surface of your finger-nail, reader. Under no circumstances should it ever be touched. If it is removed, Nature will be wickedly deprived of her needed covering, and cruelly left exposed to the elements.

In respect to applying the shoe to the foot, two methods are in vogue, — *hot* and *cold* fitting, as they are called. Which is the better, I am free to say, I have not decided. The weight of authority is nearly the same in either scale. The advocates of cold fitting declare that they can fit a shoe with rasp and file as evenly as the necessities of the case require, and that this can be done at no great cost of time or skill. They, moreover, charge that both reason and analogy are in opposition to burning a horny surface, and declare that it honeycombs the wall of the foot, and prevents its natural and healthy growth. The disciples of hot fitting, on the other hand, declare that few men can level the foot, or so hammer and file the shoe that the fit shall be what is required; and that only by burning can the connection between steel and horn be made sufficiently close and solid. For myself, I do not deny the advantages of hot fitting, especially when your horse must be shod by rude and unskilful workmen: still my impression is, that, where skill and time are attainable, the cold-fitting method is by far the more preferable. In order that the reader may have the hot method of

fitting the shoe clearly stated, I will make the following selection from the same author we have just quoted, who is an earnest advocate of it, and who has stated its advantages more clearly than any other writer: —

"*Hot and Cold Fitting.* — For very many years, the two systems of fitting horseshoes — in a cold and a heated condition — to the hoofs have been extensively and severely tested; and the result has been, that cold fitting is, as a rule, only resorted to when circumstances prevent the adoption of the other method, or when the owner of a horse, imagining that the hot shoe injures the foot, incurs the risks attending a bad fit to guard against his imaginary evil.

"It is needless, in a brief essay like the present, to enter into a relation of the observations and experiments which have established the undoubted and great superiority of what is termed 'hot' to 'cold' fitting. These will be found noticed at some length in a work recently published by me, entitled 'Horseshoes and Horseshoeing.' It may be sufficient to state that the evils supposed to result from fitting the shoes hot to the hoofs are purely chimerical. It is true, when the sole is excessively mutilated, should the farrier keep the heated shoe too long in contact with it, injury would doubtless follow; but this accident is so exceedingly rare as to be scarcely ever known, even in forges where shoeing is performed in the most objectionable manner. The ill effects imagined to arise from hot shoeing can easily be traced to the operation of other causes, not the least of

which is the fashion of paring the lower face of the foot.

"The chief objections to cold shoeing are the want of solidity; the foot being made to fit the shoe, and the process being more difficult and expensive.

"The defective solidity is patent to every one who has had any experience in the matter. It is impossible to level the ends of the horn-fibres so accurately that they will all rest evenly on the surface of the iron: so, those which are most prominent soon giving way to pressure, the bed of the shoe is altered; and this, becoming loose, is either lost, or we have projecting clinches. And, even should the fibres be made perfectly level, wet softens them, causing them to become pulpy and shorter, by which means the seat of the shoe is impaired, and the nails lose their firm hold of the wall. Ample experience on active service, as well as that gathered at home during peace, has demonstrated the instability resulting from cold fitting.

"Owing to the increased trouble and loss of time incurred by this method in attempts to make the shoe fit somewhat accurately, but few farriers can afford or are willing to resort to it. Hence, when it is practised, if the shoe is at all like the foot, it is put on; and rasp and knife insure the hoof being made to fit it. This proceeding is very injurious.

"In hot fitting we have none of these objections. The shoe is very readily adapted to the foot: it is more equally applied, and rests solidly on the hoof, so that the

nails are not broken or displaced by the shoe becoming loose: in fine, there is a more intimate contact between the iron and the surface of the horn. The very fact of burning or fusing the ends of the fibres insures a solid, durable bed which cannot be obtained otherwise, as this destroys the spongy, absorbent properties of the horn, and renders it eminently calculated to withstand the influence of moisture. The effects produced on horn by the hot iron have been compared to those of fire on pieces of wood whose ends have been superficially carbonized before being buried in the ground. Every one knows that this operation contributes to the preservation of the wood by preserving it from the action of humidity.

"Horn is a very slow conductor of heat; and it requires a very prolonged application of the hot shoe to affect the hoof to any considerable depth. Three minutes' burning of the lower face of the sole has been found necessary to produce any indication of increase of temperature by the thermometer on its upper surface. It is never required that the shoe should be applied longer than a few seconds.

"The hot shoe, in fusing the horn with which it comes in contact, imprints itself like a seal in melted sealing-wax; and in this way the two surfaces of foot and shoe exactly coincide; while, no matter how expert the workman may be in using his tools to level the horn in a cold state, he can never do it so quickly or so completely as may be done by making an impression with the heated

shoe, and consequently establishing between the lower margin of the hoof and the shoe an exact co-aptation.

"It may be added, that, when the surface of the horn has been softened by the action of caloric, the nails enter it more readily; the clips and inequalities are more easily embedded; and, when it recovers its habitual consistency after cooling, the union between it and the metallic parts which are in contact becomes all the more intimate because of the slight contraction that follows the expansion produced by the heat. Under these conditions, the horn contracts on the shanks of the nails, and retains them most securely.

"All the highest veterinary authorities who have studied the subject are unanimous in recommending hot fitting in preference to cold. The latter is only justifiable when it is impossible to adopt the former. The red-hot shoe at once disposes of those inequalities which cannot be discovered, or removed by tools; and it shows the workman at a glance the bearing of the shoe on the hoof, as well as the imprint of the nail-holes. Without being reheated, any alteration can be readily and at once effected in moulding the shoe to the shape of the toe.

"The whole surface of the shoe intended to be in contact with the horn should be distinctly impressed on the contour of the hoof, so as to insure the closest and most accurate intimacy between the two; and this carbonized surface should not be interfered with on any account, except by the rasp, which is only to be employed in re-

moving any sharpness or inequality on the extreme edge of the wall that may have been caused in fitting.

"It is necessary to bear in mind that the shoe should be fitted at a *red* heat. Its application then need only be very brief; and it is far more effective in producing a solid level surface. It ought not to be applied at a *black* heat. Should the margin of the hoof not be sufficiently levelled by the rasp before the application of the hot shoe, a slight contact of the latter will show the inequalities; and these may then be removed by rasp or knife. On no occasion ought the shoe to remain longer on the hoof than is necessary to produce a solid, perfectly level surface."

If, after reading this statement, the thoughtful horseman is not convinced touching the advantages of the hot method, — and I will confess that I am not, — he will doubtless remain unconvinced; for no stronger statement of its supposed advantages has ever been made.

There is but one other point that I need touch upon in this chapter: it is concerning the weight of shoes. The two most desirable qualities in a shoe are lightness and durability. To combine these qualities, skill is requisite; and that is one reason why so many heavy shoes are forged out. Another reason is, because, when so much of the horse's foot has been cut away as is the custom, it must be replaced in the form of metal. Hence shoes of great width are made, — so wide, indeed, that they resemble the earliest specimens found in the provinces of Constantine, — the Syrian shoe, which was

little better than a solid plate of iron nailed to the hoof, with a small circular hole cut out in the middle. This is repeating history with a vengeance. These shoes are not only wide, but thick, which makes them even heavier than the Syrian shoe. This thickness is required, as some say, in order to protect the foot from jar. Mr. Miles favors this view, which is enough to make one doubt his sanity. Fleming is certainly right when he says that the flexible horn is the best modifier of concussion; and that as the thickness of metal increases, so does the jar. But the greatest objection to a heavy shoe is to be found in the fact, that it puts an unnatural and dangerous strain upon the muscles and tendons of the limb bearing it. A French professor (Bouley) made several years ago a curious estimate touching the muscular exhaustion and fatigue resulting from the use of heavy shoes. I make the following quotation: —

"If, at the termination of a day's work, we calculate the weight represented by the mass of heavy shoes that a horse is condemned to carry at each step, we arrive at a formidable array of figures, and in this way are able to estimate the amount of force uselessly expended by the animal in raising the shoes that surcharge his feet. The calculation I have made possesses an eloquence that dispenses with very long commentaries. Suppose that the weight of a shoe is 1,000 grams: it is not excessive to admit that a horse trots at the rate of one step every second, or sixty steps a minute. In a

minute, then, the limb of a horse whose foot carries one kilogram makes an effort necessary to raise, kilogram after kilogram, a weight of 60 kilograms. For the four limbs, this weight in a minute is represented by $60 \times 4 = 240$ kilograms; for the four feet during an hour the weight is 14,000 kilograms; and for four hours, the mean duration of a day's work in these omnibuses, the total amount of weight raised has reached the respectable figure of 57,000 kilograms. But the movement communicated to these 57,000 kilograms represents an expenditure of power employed by the motor without any useful result; and, as the motor is a living one, this expense of strength represents an exhaustion, or, if you like it better, a degree of fatigue, proportioned to the effort necessary for its manifestation. This calculation is most simple, and readily understood. It is to be noted, nevertheless, that I have omitted a considerable fact; which is, that the weights I have tabulated are situated at the extremities of the limbs, and that the arms of the levers on which the muscles act to raise them, being infinitely shorter than those of the physiological resistance to which these weights are added, the intensity of their action ought, therefore, to be singularly increased. But to measure this intensity of action would require a mathematical aptitude which I do not possess. I will not, therefore, dwell on this point, notwithstanding its importance; and am content to signalize it. Otherwise, the figures I present speak for themselves, and tell us that the diminution in the

weight of horse-shoes is not an accessory consideration so far as the useful application of the horse's strength goes."

In the light of this ingenious calculation, what an enormous outlay of muscular strength it must take in the aggregate, on the part of the American trotting-horse, to lift, with the rapidity required, the monstrous shoes which are ruthlessly nailed to his hoof!

In respect to the preservation of the horse's hoof, I would say that it is almost impossible to keep the foot of the horse thoroughly sound while we keep him standing continuously on wooden floors. No one could persuade me to allow a valuable colt to be stabled in a stall the floor of which is wood. It may not be amiss to state, at this point, the fashion, or style, of stall-floors in my stables.

The dirt is first excavated to the depth of two feet. Stones are then put in haphazard until half the pit is filled. Six inches in depth of cobble-stones are then added; then four inches of earth thrown in. Over all this is spread beach-sand or bank-gravel to the depth of three or four inches. This is my model stall-floor. Its advantages are many. It is cheap. It requires no skilled labor to make it. Once made, it is always made. There are no timbers to decay, nor planks to rot out. It is never damp. The liquids leach easily through it. Standing in such a stall, your horses will never have dried, contracted feet; but they will be strictly in the state of nature. In case

that you have a horse with contracted and hardened hoofs, scaly and brittle, that you must moisten and soak out, do not waste your money on "patent stuffing" and costly "dressing" for the feet, but take your basket and go down into the swamp, and gather a bushel or two of swamp-moss. Now take boards, and make a box some three feet long by two feet wide, and six inches in depth. Fill this box with moss well moistened with water, and so tie your horse that he will stand with his fore-feet amid the moss. Do not allow him to stand more than two or three hours at a time thus, lest the chemical action of the moss should be too rapid and strong. Watch its influence on his feet, and do as your judgment decides. In this way the hardest and flintiest foot can be rendered soft and yielding after only a few days of treatment. It is a valuable recipe for such ills.

The publishers' announcement warns me that my manuscript has reached the desired bulk, and that this section of the work must be drawn to a close. My object in writing it has been to quicken thought, and start discussion. Viewed only in this light is it satisfactory even to myself. The conclusion which my mind has reached, after all my reading and investigation touching the horse's foot, may be summed up in a few brief maxims. Never touch the bars, frog, or sole of the horse's foot with a knife, or rasp. Shoe with light, thin shoes, that allow the sole, bars, and frog to be brought in contact with the ground, and thus bear their

due proportion of the horse's weight. Use small nails, and not over five of them. Never allow the points to be driven high up in the wall of the hoof, nor a rasp to be touched to the outer surface. For ordinary service in the country during the summer months, use only tips, which protect the toe, but leave the entire ground-surface of the foot unprotected. In brief, feel that He who made the horse's foot is wiser than you are; and meddle with his perfect work as little as possible.

CHAPTER VIII.

THE MORGAN HORSE: HIS RELATION TO BREEDING.

I do not purpose to write the history of the Morgan horses, although to do it would be like writing the history of kings. Lack of space, and not lack of desire, denies me the pleasure of such a task. Still it is a work that should be done; and, if no abler pen should be found to do it, at some future day, if life and leisure be granted me, mine may attempt it. I regard it as nothing less than shame to the horsemen of New England, that, with the exception of Mr. Linsley's book, no effort has been made to collect and arrange in popular form the material for the history of the most remarkable family of horses that New England or America has ever had. Indeed, the Morgan family may be said to be the only family that has existed in this country as such.

Of Justin Morgan alone can it be said, that he founded a family. Other horses there have been of note, and whose eminence was well deserved; but they passed away, and left no sons so like themselves as to be

distinctively theirs. Messenger was a remarkable horse; and America owes him more than words can express: but Messenger lacked one thing, — the power to take of other bloods, and dominate them, stamping them with his imperial likeness. Diomed was a wonderful animal, after my way of thinking, ranking on a level with Messenger; in no respect inferior. But Diomed lacked that royal something, which, when existing in a horse, makes all other families tributary to himself, — that power to absorb, and not be absorbed; to allow turbid currents to be mingled with the stream of his life, and yet flow on in the same pure majesty. This, neither Diomed nor Messenger nor Bashaw, nor any other imported horse from which we trace our trotting-action, ever had. Their colts were of all sizes and colors and temperaments and structural formation. One would be coarse-limbed, big-headed, and rat-tailed, like Abdallah; another would have the countenance of a Barb, and limbs like an Arab's. They were all royal; but none were kingly. Not one builded a throne and founded a nation whose population were abundant, and all his children. But Justin Morgan did this thing. He stands the progenitor of a mighty race, spread over all the land from Maine to California; and, wherever you find a Morgan horse, — whether in city or country, East or West, North or South, — you know that he is a Morgan horse. One glance is enough: color, shape, style, limbs, feet, head, all suggest the little horse from which he lineally descended, — Justin Morgan. Men say he had no

"blood." Out upon the assertion! His blood must have been of the purest, or it never could have ruled in mastery over all other bloods, as it did, and still continues to do.

Ask Mr. Wallace, one of the most honest and painstaking students of the horse any nation has ever been honored with, — ask him what is the superlative test of blood; and he will tell you, the power to *mark* descendants with its own characteristics. This is the crucial test, beside which mere verbal pedigrees are simply bits of paper. Apply this test to Justin Morgan (there are many horses who walk with plumed heads to-day that cannot stand this test), and see how royally he bears it! Stand him in the full blaze of such a scrutiny, and observe that the fervor which withers other garlands only causes his wreath to take a greener hue. How other bloods bowed in submission to his! Crossed with twenty families, he dominated over them all. No matter what the dam might be, the colt was sure to look like the sire. There were the same feet and legs, and depth of chest, and haunches swollen with muscles, the same proud curve to the neck, prominent eye, quick ear, full front, and muzzle lean as a sweated racer's. Men say he had no pedigree. He had. His pedigree was written in the form and spirit of his children. It was verified beyond the verification of written affidavits. Not that these were lacking. No candid and intelligent student of the question can have the shadow of a doubt that his sire was Beautiful Bay, or that his dam was of the

Wildair breed. But, for one, I care nothing for this verbal pedigree in the case of Justin Morgan: it is a waste of words to discuss it. The proofs of his pedigree were not *back* of him, but *in* him; and they were read in living characters in his three great sons, — Sherman, Woodbury, and Bulrush, — and in all the successive generations of his descendants, even down to the present time. What names adorn the scroll of his fame! — Black Hawk, Gifford, Ethan Allen, Morrill, Taggart's Abdallah, Gen. Knox, Fearnaught, Lambert: these are enough, if there were no more, to make his name immortal. The sire of such sons cannot be denied his rank and place amid the great stock-horses of the world. The ignorance of some, and the malice of others, cannot belittle his greatness. This stands secure, not only above the peril, but even above the reach, of attack.

It is of a family of horses with such an ancestor, and sharing his characteristics, that I now write, not in way of eulogy, but rather of suggestion to breeders. I claim for the Morgan horse a few things which make him the most desirable horse on which to base experiments in crossing that any man ever had. The first of these peculiarities is this, — *the power of transmitting his excellences to his offspring.*

This power makes the horse that has it absolutely invaluable for breeding-purposes, because it takes uncertainty from the process. Give the breeder a horse that *marks* his get in form, color, and tempera-

ment like himself, and he knows beforehand what he is to have: anxiety is dismissed. He knows how the colt will look before he is foaled. This is the first, and perhaps the most characteristic, peculiarity of the Morgan horses. Other things being equal, no stallion is so good for stock-purposes as one strongly infused with Morgan blood; and the reason is simply because the Morgan blood is a strong, masterful blood, yielding to none, but conquering all, and transmitting itself to those born of it.

The second excellence for which the Morgan horse is noted is *beauty*.

Twenty years ago, *speed* was every thing. If a horse could *go*, that was enough. We have lived beyond that period. Beauty is demanded now in the markets, and paid for handsomely; and the questions with every breeder, therefore, necessarily are, "What is the cross by which I can add beauty to speed? Where can I get the fine, rich coat, the spirited face, the quick ear, the arched tail, the small black hoofs, the flat, wiry legs, that shall cause men to contend for the possession of my colts?" That is what Mr. Taggart, Col. Russell, Mr. Dorsey, Mr. Nevins, and Col. Sprague, wished to know; and that is why they all went to the Morgan family for stallions to head their respective stables. I ask any man to select in all the country six other stallions of such striking beauty as Taggart's Abdallah, Fearnaught, Young Fearnaught, Ethan Allen, Rolla Gold Dust, and Lambert, — all direct descend-

ants from Justin Morgan, and strongly marked with the Morgan characteristics. For beauty, give me, in breeding, a Morgan horse for a sire, and a well-bred mare for a dam. With such a cross I know what I shall get, so far as beauty goes, at any rate; and beauty is growing to be worth more and more in greenbacks every year.

The third characteristic excellence of the Morgan horses is their *docility*.

"You can teach a Morgan colt any thing" is a proverb among the people; and the proverbs of a people always blossom out of facts. And it is a fact, that the Morgans are all teachable. They are quick to catch your meaning: and, once taught, they are always taught; for they never forget any thing once learned. Their memory is like a dog's, — faultless. They are amiable as a race, and of very affectionate dispositions. They love to be petted and caressed. They will do as much for a word as for a blow. They are never tricky. That they are high-strung and frisky, we admit; but their playfulness is always good-natured, never vicious. Even in their wildest antics they are never destructive, but are careful, and yield readily to rebuke. If speedy, they can be trained without difficulty, if you will let the whip alone; and will do all that in them lies at the word of the driver. The Morgan horse is beautiful; he is also docile; and these characteristics he *transmits*, — three steps, at least, that lead to the equine throne.

The fourth characteristic peculiar to the Morgan horse is *endurance.*

A hardier race of horses was never bred. In power to do hard work, and *keep on doing it*, month in and month out, the Morgans stand at the head of the column. In lung-power they were simply perfect; in feet and limbs, faultless; in muscular formation, marvellous; and in connection with this was a nervous or *vital* force that seemed to be equal to every effort, and appalled at no emergency. Years did not appear to lessen their power, or dampen their ardor. At twenty they were as young as members of other families are at ten; and at thirty their eyes had not lost their fire, or their action its boldness. Now, this *iron-like quality* is what breeders must put into their colts. We can get speed easily enough; but we must have speed, and the power to keep it up mile after mile, and hour after hour. *Endurance* is what we must have in our horses; and this is precisely what the Morgan blood gives. It is pre-eminently the heirloom of the family, and is handed down from sire to son in undiminished integrity.

The last characteristic of the Morgan family that I shall mention is *speed.*

It is said by some that the Morgan family had no speed. If this were true, still there would be such great excellences of form, temperament, color, and style, that it would remain a most valuable family with which to cross in breeding. But it is not true; for the

fact is, all things being candidly considered, I believe every one will admit that they have produced more trotters than any other family in the world. I ask the reader to bear in mind, that in Justin Morgan's day, and also during the lifetime of his immediate descendants, trotting, as we understand it, was not in vogue. The State of Vermont is, moreover, ill adapted, in its topography and the industries of its inhabitants, to develop fast trotting-horses. The roads are hilly, and, up to a very recent period, the tracks few. Lumbering, and clearing up farm-lands and staging, in a mountainous country, are not just the work one would select to develop trotters. How much, think you, do the Hambletonian and Clay families owe to training? All that money and skill could do for them has been done. Every colt with any promise, sired by Rysdyk's horse, has been cultured and developed to the limit of the possible. But the Morgan horses have never been petted. They were not thus favored. Circumstances were all against the family; and no careful student will forget this fact when studying the question. Nevertheless, in spite of neglect and adverse circumstances, the Morgan horse need ask no odds of any. To his beauty, docility, endurance, his friends can add the word *speed*, and bide, with cheerfulness, investigation and comparison. The farther I push my inquiries in this direction, the more am I astonished at the evidence. The number of fast horses lineally descended in the male line from Justin Morgan surprise me. I submit the following list in proof: —

Ethan Allen	trotted a mile in	. . .	2.15
Lady Sutton	" "	. . .	2.33
Beppo	" "	. . .	2.31½
Pizarro	" "	. . .	2.35
Blue Morgan	" "	. . .	2.33½
Black Ralph	" "	. . .	2.31
Know-Nothing	" "	. . .	2.27½
Chicago Jack	" "	. . .	2.27½
Belle of Saratoga	" "	. . .	2.29½
Warwick	" "	. . .	2.29½
Grit	" "	. . .	2.29
Capt. Lightfoot	" "	. . .	2.28
Draco	" "	. . .	2.27½
Fannie Allen	" "	. . .	2.25½
Fannie Jenks	trotted ten miles in	. .	29.59
" "	" a hundred miles in	9 h.	24.30
Gilbreth Knox	trotted a mile in	. .	2.26¾
Hotspur	" "	. . .	2.23½
Joe Hooper, jun.,	" "	. . .	2.28¾
Lady Ross	" "	. . .	2.29¾
Locust	" "	. . .	2.24¼
Mountain Maid	" "	. . .	2.29¾
Nonesuch	" "	. . .	2.25½
Rolla Gold Dust	" "	. . .	2.21
Susie	" "	. . .	2.26½
Spartan	" "	. . .	2.28
Uncle Abe	" "	. . .	2.27
Washington Irving	trotted a mile in	. .	2.30
Billy Barr	" "	. .	2.23¾
Carroll	" "	. .	2.30
Draco Prince	" "	. .	2.24
Fearnaught	" "	. .	2.23¼
Fannie Lee	" "	. .	2.28
Gray Mack	" "	. .	2.25½

Gray Jack trotted a mile in			2.28¼
Honest Allen	"	"	2.29
Lady Sherman	"	"	2.29
Lancet	"	"	2.25
Mac	"	"	2.25
Pocahontas	"	"	2.26¾
Panic	"	"	2.25
Royal John	"	"	2.26¼
Strideaway	"	"	2.28½
Tennessee	"	"	2.27
Young Morrill	"	"	2.36
Gen. Lyon	"	"	2.36
Defiance	"	"	2.35
Camors	"	"	2.26
Commee	"	"	2.27½
Parkis' Abdallah	"	"	2.27½
Young Fearnaught	"	"	
Ned Wallace (a four-year old), trotted a mile in			2.33
Allen Prince		" " "	2.26½

Here, then, are forty-nine lineal descendants of the old Justin Morgan, that have trotted as follows: —

Two a mile in	2.36
Forty-nine better than	2.36
Forty better than	2.30
And fourteen better than	2.26

It is possible, that, here and there in the list, a slight error may be found; but I believe the record to be entirely trustworthy and reliable.

Now, I wish, in all candor, to inquire if the record is not a good one. What other horse has New England ever had with such a list of descendants? Where

is the "Bush Messenger" family to which New England is so much "indebted"? Will some one please mention the "Hambletonian" trotters? If I write earnestly and strongly, I do it, be it remembered, in defence of a family of horses suffering from a most unjust impeachment, and in vindication of a great truth, that it is for the interest of every New-England breeder to know; viz., *that the family of horses which has been distinguished by, and embodied, the four great essentials of the perfect horse, — beauty, docility, endurance, and speed, — is the Morgan.*

If any one should say, "Why! Fearnaught is not a Morgan," I respond, "He is just as much a Morgan as Dexter is a Hambletonian, or George M. Patchen, jun., is a Clay horse;" that is, he runs straight back in the male line to Justin Morgan.

I do not think that many people realize how much we are actually indebted to this family of horses for our trotting-stock. Many men who own valuable stock-horses in New England, lineally descended from old Justin Morgan, seem unaware of the fact. Indeed, I have sometimes thought that I detected, on the part of some, a desire to conceal the very connection and relationship from which, beyond doubt, their horses derived the larger part of their excellence. Some foolish writer has asserted that certain descendants of this horse were not potentially affected by their relationship with him; indeed, were not Morgan horses at all. The method by which he proves this, as a specimen

of ingenuity in silliness, cannot be beaten. His reasoning runs thus: Sherman Morgan drew one-half of his blood from Justin Morgan, his sire; his son Black Hawk, one-eighth; his son Ethan Allen, one-sixteenth; his son Daniel Lambert, one-thirty-second; his sons, one-sixty-fourth: therefore, as a son of Daniel Lambert has only one-sixty-fourth of old Justin Morgan's blood in his veins, he is no descendant of his; indeed, no Morgan horse at all. This is, indeed, brilliant reasoning! Suppose we illustrate it with a sample of the human family. The first Murray — that is, the head of my family — that came to America was named John Murray. His son Jonathan drew only one-half of his blood from his father; his son John, one-eighth; his son Calvin, one-sixteenth; his son Dickinson, one-thirty-second; his son William, one-sixty-fourth: therefore I, because I do not have but one-sixty-fourth of the original John Murray's blood in my veins, am no Murray at all. That is going back on one's relations with a vengeance! The fact is, — and all attempts to elude and evade it are silly at the start, and, if repeated, detestable, — the fact is, the male side of the family gives the name to the family, with horses as with men. As a matter of justice, I might as consistently call myself Munger, because my mother's name was that, as that Mr. Taggart's famous horse should be called Abdallah, ignoring the fact, that, in the male line, he runs straight back through Farmer's Beauty, Gifford, Woodbury, to old Justin Morgan. I call him a full Morgan horse. So

I do Fearnaught, who likewise runs straight as a string through Young Morrill, Old Morrill, Bulrush Morgan, to old Justin Morgan himself. Likewise Gen. Knox, one of the most justly celebrated stock-horses Maine, New England, or the country, ever had, — the sire of Gilbreth Knox (record 2.26), Camors (record 2.21¾), Lady Maud (record 2.22¼), and Plato (record 2.27½), — is a true Morgan: for his sire was Sherman Black Hawk; grandsire, Black Hawk; great-grandsire, Sherman; great-great-grandsire, Justin Morgan. What right have men to rob a horse of his laurels, or deny him that fame, which, by the character of his get, he can justly claim? Who would treat Old Messenger or Diomed or Bashaw in this manner? Especially, how can we deny the Morgan relationship, when the horse in question not only is a lineal descendant of Justin Morgan, but even bears the marks and characteristics of the family most unmistakably? Who can look at Taggart's Abdallah, or Ethan Allen, or Rolla Gold Dust, and not feel that the Morgan blood has proved the dominant blood in their case, and marked them with an unmistakable impress? And I ask certain of my readers to observe that this Morgan connection never gives heavy jowls, and large ears, and big legs, and long backs, to a horse, — as connection with certain families I might mention is pretty apt to do, — but puts just what you wish into a horse, and no more.

It is said that Justin Morgan was a low-bred horse. But such a statement is a gross slander. There can be

no doubt, in any candid man's mind who investigates the matter, that Justin Morgan was sired by True Briton or Beautiful Bay, owned by Sealy Norton of East Hartford, Conn., and then kept by John Morgan at West Springfield, Mass., where he then lived. That his dam was a mare of good breeding is also beyond question. Whether the sire of Beautiful Bay was the imported horse Traveller or not, — and this point I do not attempt to decide, — it cannot be denied that Beautiful Bay was a horse noted for his fine-blooded qualities.

But, outside of and above all considerations of approved pedigree, the horse, as I have said, demonstrated his fine breeding in his get. All authorities agree that none but high-bred horses can mark their colts. The power to transmit his own likeness to his descendants is peculiarly the characteristic of the thorough-bred horse: and none can deny that Justin Morgan had this power in a marvellous degree; and, higher proof yet, he *gave this power to his sons.* This, to my mind, constitutes a demonstration, and makes written pedigree of little account. Fortunately, also, we know what manner of horse he was; and, as a matter of interest to the general reader, I will insert at this place the following very accurate description and history of the Justin Morgan, as found in Mr. Linsley's work on "The Morgan Horse:" —

"The original, or Justin Morgan, was about fourteen hands high, and weighed about nine hundred and fifty pounds. His color was dark bay, with black legs,

mane, and tail. He had no white hairs on him. His mane and tail were coarse and heavy, but not so massive as has been sometimes described. The hair of both was straight, and not inclined to curl. His head was good, not extremely small, but lean and bony; the face straight; forehead broad; ears small and very fine, but set rather wide apart. His eyes were medium size, very dark and prominent, with a spirited but pleasant expression, and showed no white round the edge of the lid. His nostrils were very large, the muzzle small, and the lips close and firm. His back and legs were, perhaps, his most noticeable points. The former was very short; the shoulder-blades and hip-bones being very long and oblique, and the loins exceedingly broad and muscular. His body was rather long, round, and deep, close ribbed up; chest deep and wide, with the breast-bone projecting a good deal in front. His legs were short, close-jointed, thin, but very wide, hard, and free from meat, with muscles that were remarkably large for a horse of his size; and this superabundance of muscle exhibited itself at every step. His hair was short, and, at almost all seasons, soft and glossy. He had a little long hair about the fetlocks, and for two or three inches above the fetlock, on the back-side of the legs: the rest of the limbs were entirely free from it. His feet were small, but well shaped; and he was in every respect perfectly sound, and free from any sort of blemish. He was a very fast walker. In trotting, his gait was low and smooth, and

his step short and nervous. He was not what in these days would be called fast: and we think it doubtful whether he could trot a mile, much, if any, within four minutes; though it is claimed by many that he could trot it in three.

"Although he raised his feet but little, he never stumbled. His proud, bold, and fearless style of movement, and his vigorous, untiring action, have, perhaps, never been surpassed. When a rider was on him, he was obedient to the slightest motion of the rein; would walk backwards rapidly under a gentle pressure of the bit; and moved sideways almost as willingly as he moved forward; in short, was perfectly trained to all the paces and evolutions of a parade-horse. When ridden at military reviews (as was frequently the case), his bold, imposing style, and spirited, nervous action, attracted universal attention and admiration. He was perfectly gentle and kind to handle, and loved to be groomed and caressed: but he disliked to have children about him; and had an inveterate hatred for dogs, — if loose, always chasing them out of sight the instant he saw them. When taken out with halter or bridle, he was in constant motion, and very playful.

"He was a fleet runner at short distances. Running horses short distances for small stakes was very common in Vermont fifty years ago. Eighty rods was very generally the length of the course, which usually commenced at a tavern or grocery, and extended the distance agreed upon, up or down the public road. In

these races the horses were started from a 'scratch,'—that is, a mark was drawn across the road in the dirt; and the horses, ranged in a row upon it, went off at 'the drop of a hat' or some other signal. It will be observed that the form of the Justin Morgan was not such as in our days is thought best calculated to give the greatest speed for a short distance. Those who believe in long-legged racers will think his legs, body, and stride were all too short; and to them it may, perhaps, seem surprising that he should be successful, as he invariably was, in such contests. But we think his great muscular development and nervous energy, combined with his small size, gave him a decided advantage in the first start over taller and heavier horses; just as any ordinary horse can distance the finest locomotive in a ten-rod race. At all events, the history of racing in this country and in England proves conclusively that small horses *may* have great speed. In such a race, a horse of great spirit and nervous energy derives a decided advantage from these qualities, especially after being a little accustomed to such struggles. When brought up to the line, his eyes flash, and his ears quiver with intense excitement; he grinds his bit with his teeth; his hind-legs are drawn under him; every muscle of his frame trembles, and swells almost to bursting; and, at the given signal, he goes off like the springing of a steel trap. His unvarying success in these short races may perhaps be partly accounted for in this way; though he was undoubtedly

possessed of more than ordinary speed, and was a sharp runner.

"Among the many races of this description that he ran were two in 1796, at Brookfield, Vt., — one with a horse called Sweepstakes from Long Island; and the other with a horse called Silver Tail from St. Lawrence County, N.Y.: both of these he beat with ease. Mr. Morgan (who then owned him) offered to give the owner of Silver Tail two more chances to win the stake, which was fifty dollars, by walking or trotting the horses for it; which was declined. There are many accounts of other races which he ran and won; but, these accounts not fully agreeing as to the details, we have not mentioned them.

"In harness the Justin Morgan was quiet, but full of spirit; an eager and nimble traveller, but patient in bad spots; and, although for a long time steadily engaged in the heavy work of a new farm, his owner at that time informs us that he never knew him refuse to draw as often as he was required to: but he pithily adds, 'I didn't very often have to ask him but once; for whatever he was hitched to generally had to come the first time trying.' This uniform kindness at a pull was one of the striking characteristics of the horse; and the same trait may be observed in the greater part of his descendants. 'Pulling matches' and 'pulling bees' were as common in those days as short races; and the 'little horse,' as he was often called, became quite celebrated for his unvarying willingness to do his best, and for his great power at what is called a 'dead lift.'

"The following letter from Solomon Steele, Esq., of Derby, Vt., — a gentleman who has devoted a great deal of time and money to the improvement of horses in his vicinity, and who, notwithstanding the apathy of some and the opposition of others, now enjoys the pleasure of seeing his precepts adopted and his example followed by his neighbors, to their great advantage, and the equal improvement of their stock, — will be read with interest: —

"Derby Line, Vt., March 12, 1856.

"D. C. Linsley, Esq.

"*Dear Sir*, — I am in receipt of yours of the 1st inst., renewing your request that I should favor you with such information as I may possess in relation to the early history of the founder of that breed of horses which have at length become so distinguished as to be called the 'best in the world,' and known as Morgans. I have not the vanity to presume that I can disclose any material facts relative to this subject; but, at your request, I will mention some incidents connected with the early history of this horse, which, if not of great importance, may not be void of interest. It has been my privilege, in early life, to often see the original Morgan horse, called by this name from the fact that Justin Morgan brought him to Randolph, Vt., from Massachusetts, in the autumn of 1795. Mr. Morgan intended to apply him to the payment of a note held against him; but not being able to obtain what he considered a reasonable price for him, and having no keeping for him, he let

him to a man by the name of Robert Evans, for one year, for the sum of fifteen dollars. Immediately after this, Evans undertook the job of clearing fifteen acres of heavy timbered land for a Mr. Fisk; and, before the 1st of June following, had completed the job, with no other team but this colt, though not regarded as a 'salable horse.'

"While Evans was engaged in piling this timber, the remarkable powers of this horse, it would seem, were in a measure developed, as he was then found able to out-draw, out-walk, out-trot, or out-run, every horse that was matched against him. An instance was related to me by Mr. Nathan Nye, who was an eye-witness, and whose testimony was never questioned. I noted it at the time, and will relate it in his own words: —

"'At the time Evans had this horse, a small tavern, a grist-mill and saw-mill, were in operation on the branch of White River, in Randolph; and at this place the strength of men and horses in that settlement was generally tested. On one occasion I went to these mills, where I spent most of a day; and, during the time, many trials were had, for a small wager, to draw a certain pine-log, which lay some ten rods from the saw-mill.

"'Some horses were hitched to it that would weigh twelve hundred pounds; but not one of them could move it its length. About dusk, Evans came down from his logging-field, which was near by; and I told him the particulars of the drawing-match. Evans re-

quested me to show him the log; which I did. He then ran back to the tavern, and challenged the company to bet a gallon of rum that he could not draw the log fairly on to the logway, at three pulls, with his colt. The challenge was promptly accepted; and, each having "taken a glass," the whole company went down to the spot.

"'Arrived on the ground, Evans says, "I am ashamed to hitch my horse to a little log like that; but, if three of you will get on and ride, if I don't draw it I will forfeit the rum." Accordingly, three of those least able to stand were placed upon the log. I was present with a lantern, and cautioned those on the log to look out for their legs, as I had seen the horse draw before, and knew something had got to come. At the word of command the horse started log and men, and went more than half of the distance before stopping. At the next pull he landed his load at the spot agreed upon, to the astonishment of all present.

"'Not many days after this, the beaten party proposed to Evans to run a certain horse against his, eighty rods, for another gallon. Evans accepted; went from his work, and matched his horse against four different horses the same evening, and beat them all with ease.'

"Thus, early in the history of the Morgan horse, it was an admitted fact, that, however small, he could not be beaten where strength, speed, and endurance were the test. When we see this same animal driven in harness, or ridden by the aged and infirm with perfect

safety and confidence, and next see him at a military review, mounted by the commander-in-chief, and displaying all the fire and pride imaginable, and, after the lapse of nearly fifty years, witnessing the same remarkable traits in many of his descendants, we are constrained to admit that *blood* is, indeed, of no small importance in the business of horse-breeding. It should be well understood, that, throughout the long life of the Justin Morgan, as well as that of his immediate offspring, want of size was the universal objection. No man of ordinary judgment could fail to discover his peculiar points of excellence; his oblique shoulders, high crest, fine ear, prominent and sagacious eye, perfect head, large and expanded nostrils, strong loins, long hip, deep and well-spread chest, high withers, short pasterns, strong and sinewy limbs, with all the important muscles, far surpassing in size those of any other horse of his weight ever seen in America. The fact that this horse has contributed more than any other animal ever did to the wealth of the United States, no honest man will deny; but strange to say, in the face of all this, the cry is still heard, '*Too small, too small!*' This reminds us of the man who sold his hen because she was *too small*, although she daily laid eggs of gold. We rejoice, however, that we live in a day when intelligent men cannot so easily be made the dupes of interested parties. The farming community are thinking and acting with more care and attention than formerly. They are disposed to profit by past experience. They are more close observers of

cause and effect; and it is our firm conviction that the man who is doing most to foster and encourage this principle is the world's greatest benefactor.

"Through life the Justin Morgan was steadily employed in the heavy work incident to the cultivation of a new and mountainous country, and was often engaged in similar matches to those just mentioned. Even at the age of fifteen, we find him entered at a drawing-match that took place at Gen. Butler's tavern in St. Johnsbury. Some of his opponents are described by persons present as large, heavy horses; yet they were all beaten by the Justin. We mention these facts to show the great muscular development of the horse, and his kind and tractable temper, rather than as an evidence of his value for purposes of heavy draught; for although the power of an animal in starting a given weight depends more upon his form and muscular development than upon mere size, yet size is indispensable to enable a horse to move off easily upon the road with a heavy load.

"The quietness and exceedingly pleasant temper of the Justin Morgan is strikingly evidenced by the fact that he was often ridden and driven by ladies. A lady of St. Johnsbury once told us she remembered his appearance perfectly, and had repeatedly ridden him, when a girl, to balls and other parties; and spoke with much enthusiasm of his noble appearance, his high spirit, and perfect docility.

"It is exceedingly difficult to obtain accurate infor-

mation respecting the changes in owners that occurred to the horse at different times. To account for this uncertainty, we must consider that his fame has been almost entirely posthumous; that, although the champion of his neighborhood, he was little valued, on account of his small size; and it was not until after his death, and his descendants were exhibiting the powers of their sire, in speed, strength, and endurance, in almost every village of Eastern Vermont, that people began to realize they had not properly appreciated him. For this reason, little notice was taken, at that time, of any change of owners: and many persons who very well recollect the horse, recollect nothing of these changes; and those who claim to recollect them disagree much as to the dates at which his several owners purchased him.

"As we have before stated, Mr. Morgan used him almost exclusively as a riding-horse; though he broke him to harness, and occasionally used him in that way. After Mr. Morgan's death, he was sold by the estate to William Rice of Woodstock, Vt. Mr. Rice used him in the ordinary work of his farm for about two years, or until 1800 or 1801, when Robert Evans — who had been constantly on the watch for an opportunity to purchase since he hired him of Mr. Morgan — bought him. Mr. Evans was a poor man with a large family, and was what is called a great worker. In addition to the work upon his own place, he was constantly undertaking jobs for his neighbors, — clearing land, hauling logs, building fence, &c. The 'little horse' was Mr.

Evans's only team; and, of course, his labor was very severe. Mr. Evans kept him three or four years, or until 1804, when he was sued for debt. Col. John Goss became his bail, took the horse for security, and finally paid the debt, and kept him. Mr. John Goss was not much of a horseman, and therefore took the horse to his brother, David Goss of St. Johnsbury, who was quite a horseman, and made arrangements with him to keep him for a stock-horse. After David had kept him a year, he was so much pleased with him, that he exchanged a fine mare with his brother for him, adding cash or other property. The horse, in this trade, was valued at one hundred dollars. Mr. David Goss kept him seven years, or until 1811; and it was while owned by him that the Hawkins, Fenton, and Sherman horses were sired. Mr. Goss kept him almost constantly at work on his farm, with the exception of about two months in the spring of each year. While his property, although put to hard work, the horse was not overworked or abused, but was properly treated and cared for. David Goss sold him to his son Philip. Some of his colts about Randolph having grown up, and proved valuable, there was some inquiry for the horse in that vicinity; and he was accordingly taken back to that town. This was in 1811.

"He was now nineteen years old; and those who owned him at different times after this generally seemed eager to get rid of him, for fear he should die on their hands. Immediately after his return to Randolph, he seems to

have been taken care of by Robert Evans, his former owner; for it was during this year that Bulrush was sired, and he was at that time in the possession of Mr. Evans.

"Soon after this, or in the autumn of 1811, Philip Goss sold him to Jacob Sanderson. Sanderson sold him to a Mr. Langmade, who used the old horse hard, considering his age. He worked him some time in a six-horse team, hauling freight from Windsor to Chelsea. Under this treatment he became thin and poor, and was purchased for a trifle by Mr. Chelsea, and shortly after sold by him to Joel Goss of Claremont, N.H. Mr. Goss kept him one year, and sold him to Mr. Samuel Stone of Randolph. Mr. Stone kept him two or three years, or until 1819, when he sold him; and he soon after became the property of Levi Bean, who owned him until his death, which happened in the winter of 1821 at the farm of Clifford Bean, situated about three miles south of the village of Chelsea, Vt.

"At twenty-nine years of age, no cause need be assigned for his death but the ravages of time and the usual infirmities of years. But old age was not the immediate cause of his death. He was not stabled, but was running loose in an open yard with other horses, and received a kick from one of them in the flank. Exposed without shelter to the inclemency of a Northern winter, inflammation set in, and he died. Before receiving the hurt which caused his death, he was perfectly sound, and entirely free from any description

of blemish. His limbs were perfectly smooth, clean, free from any swelling, and perfectly limber and supple.

"Those persons who saw him in 1819 and 1820 describe his appearance as remarkably fresh and youthful. Age had not quenched his spirit, nor damped the ardor of his temper; years of severest labor had not sapped his vigor, nor broken his constitution; his eye was still bright, and his step firm and elastic.

"However various may be the opinions different persons may entertain respecting the merits of the Justin Morgan, we doubt whether any horse can be instanced, in this or any other country, that has so strikingly impressed upon his descendants, to the fifth and sixth generations, his own striking and valuable characteristics. And it may be safely asserted that the stock of no horse ever bred in this country has proved so generally and largely profitable to the breeders of it. The raising of it has made the fortunes of hundreds of individuals, and added hundreds of thousands, if not millions, of dollars to the wealth of Vermont and New Hampshire."

I feel, also, that I can do no greater service to the general reader than to insert in this connection the following history and description of the three sons of Justin Morgan from which the Morgans of to-day have descended, — viz., Sherman, Woodbury, and Bulrush; and I do it the more readily, because Mr. Linsley's work, from which the quotation is made, is out of print, very rare, and cannot be obtained: —

"Sherman was foaled in 1808 or 1809, the property of James Sherman of Lyndon, Vt. It has been said that Sherman was foaled in 1810; and it has also been said that he was foaled in 1811. It is not at all surprising that his age should be understated by a year or two, as the horse who lives to be more than ten years old loses nothing so easily as one or two years of his age.

"Our reasons for stating his age as we have are these: Mr. George Sherman, son of James Sherman, informs us that he has now been married forty-five years; and that, in the summer after he was married, his father let him take the horse, then a colt, to keep and use. Mr. Sherman's wife also well recollects the above facts: but neither of them can say positively whether the colt was two or three years old, though both of them *think* he was three; and, from the fact that Mr. Sherman used him a good deal that summer, it seems most probable that such was his age. Sherman was sired by the Justin. With regard to the blood of his dam, much has been said, and a good deal written; but we think little is actually known.

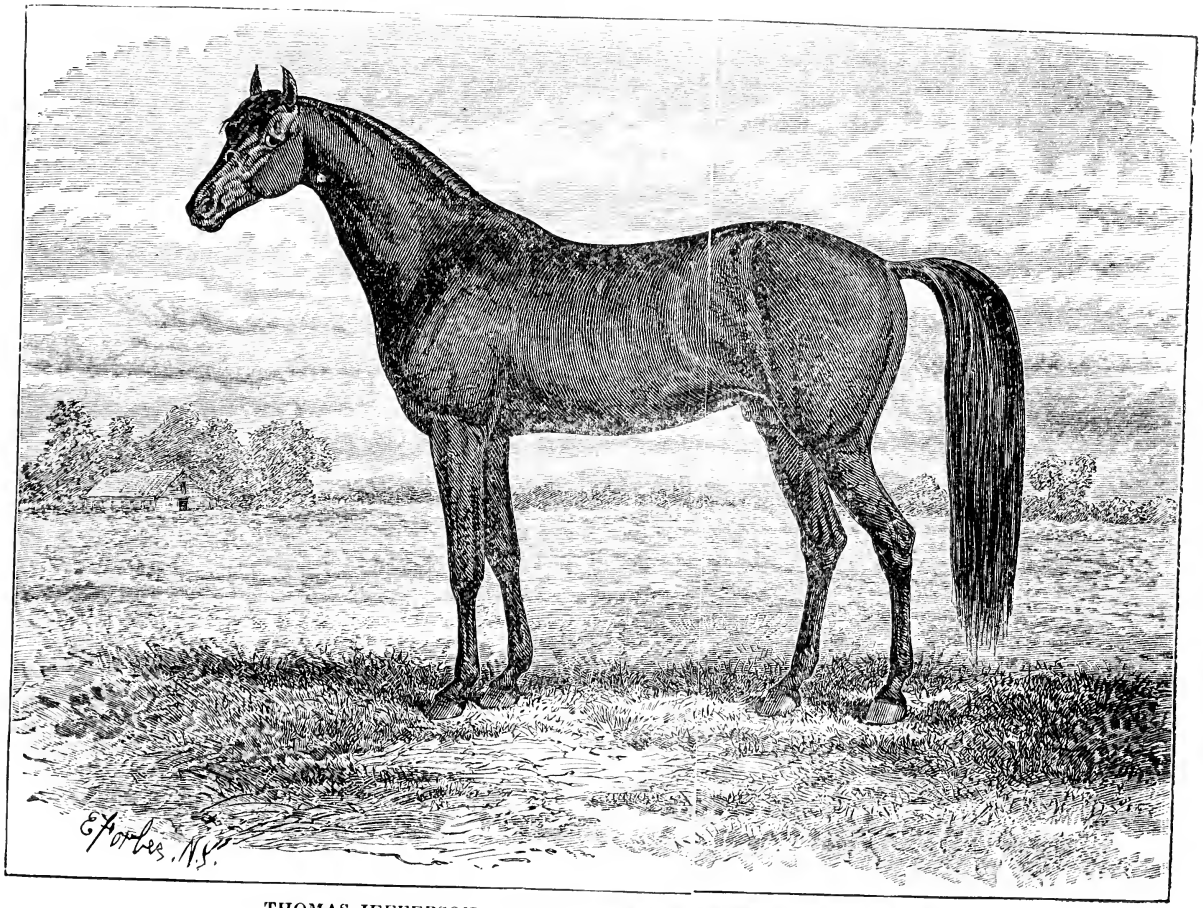
"Mr. George Sherman says his father brought the mare from Cranston, R.I., to Lyndon, Vt.; that she was a chestnut, of good size, high-spirited, and an 'elegant' animal. 'We called her of Spanish breed.'

"The late Hon. Epaphras Seymour of Brattleborough, Vt., a gentleman of fortune and high standing, and passionately fond of horses, spent much time in endeav-

oring to ascertain the pedigree and early history of the Justin Morgan and his descendants. Among the memoranda left by him, now in possession of the Hon. F. Holbrook, which the latter gentleman has kindly permitted us to examine, we find the following: 'Matthew Allen of Guildhall, now seventy years old, or over, informs me that James Sherman and himself came from Rhode Island to St. Johnsbury in 1799. Before they left, Mr. John Brown of Providence gave Mr. Sherman an imported English mare of great beauty, a fine saddle-mare, and so used by his daughters (she was then spavined). She was a mahogany brown, fifteen and a half hands high, delicate make.' Mr. Allen goes on to state that this mare was the dam of the Sherman.

"Mr. S. C. Gibbs of Littleton, N.H., who purchased the horse of Mr. James Sherman, gives the following account of the dam: 'She was bought at the South (I think in Virginia) by Mr. John Sherman of Providence, R.I., who had friends in that State. He purchased her for her beauty and speed. Soon after he returned with her, she unfortunately slipped her hip. He then gave her to his brother James of Lyndon.'

"It has also been said that the dam was long owned by Nicholas Brown of Providence, R.I., one of the well-known firm of Brown & Ives, formerly a large importing-house. Mr. George Sherman says his father bought the mare of Dr. Fiske of Cranston, R.I. It is of little consequence which of these accounts is correct, as none of them undertake to give her pedigree. If



THOMAS JEFFERSON.—OWNED BY WM. B. SMITH.—SEE PAGE 469.

either had made an attempt to do this, the question would have possessed more interest, and some importance. It certainly concerns us little to know in what manner or from whom Mr. Sherman obtained her, if we cannot go beyond that, and learn something of her pedigree. We are inclined to think the statement of Mr. Sherman entitled to the most credit, because we think his means of knowing the facts of which he speaks were much superior to the others. His father used the horse several years, valued him highly, and was often interrogated as to the dam. George must have often heard his father describe the circumstances under which he obtained her: they must have been well known in the family; and the constantly-increasing fame of the horse would keep alive in its members the recollection of them as related by James Sherman. Mr. George Sherman is a man whose character for the most unwavering honesty has been long and thoroughly established where he is known.

"Whoever may have bred the mare, and whether of Spanish or English descent, it is certain she was a fine animal. She was chestnut, with three white feet, and a white stripe in the face. Her head was good; ears small; neck light, and rather long; not very compactly formed; and never 'carried much flesh.' She carried her head high; was a spirited traveller, and an excellent saddle-beast. She was very pleasant-tempered, and worked kindly in all places.

"'Sherman' was a bright chestnut, about thirteen

and three-quarters hands high, and weighed nine hundred and twenty-five pounds. His off hind-leg was white from the foot half way to the hock, and he had a small white stripe in the face. His head was lean and well shaped; ears small and fine; eyes inclined to be small, but full, prominent, and lively. His legs had some long hairs upon the back-side, but were broad, flat, and sinewy. He had a capital chest, with the breast-bone very prominent. The shoulders were large, and well placed; the neck excellent; the mane and tail full, but not remarkably heavy. His hips were long and deep, the loins broad and muscular; but he was a little hollow or 'sway-backed:' still no suspicion of a weak back could attach to him, or he would have broken down under the rough treatment he received in early life. When four years old, Mr. Sherman put him to hard work; and though, for about two months in the spring of each year, he worked but little, yet, the remainder of the year, his labor was very severe. Mr. Sherman was a hard-working man, and animals under his charge had few opportunities to rest. Most of the year the horse was kept constantly at work on the farm, much of which he helped to 'clear up.' In the winter, Mr. Sherman usually ran a team steadily from Lyndon, Vt., to Portland, Me. For several years, this team consisted of this horse and a half-brother, sired by the Justin Morgan, a year older and a little larger than Sherman.

"Mr. Sherman was not a man to be outdone at drawing or driving; and he was always ready to match

his team against any he met, either to draw or run, for a trifling wager. His 'little team' became famous at every inn from Lyndon to Portland; and, after a time, the teamsters that knew them were afraid to match horses of any size against them. In the spring, when the sleighing became poor, the men who had been companions through the winter in the severe labor of teaming across the country would often congregate at the village taverns to spin yarns of their simple but rough adventures, engaging in wrestling, running foot and horse races, drawing-matches, and many games invented to test the speed or strength of either men or horses. In addition to these attractions, the prospect of a social glass of 'old Santa Cruz' may have had some influence in drawing together the people collected on these occasions; for it was at that time considered a pleasant beverage, and it was not generally known to be a subtle poison. Certain it is that these games were well attended, and were conducted with much spirit. Drawing-matches were at that time very common. At Lyndon, the usual way of drawing was to attach a horse to a sled, fill it with men, and draw the load up a steep hill just north of the tavern. '*When each his utmost strength had shown*,' Sherman would add a small boy to the largest load, and commence the ascent, well satisfied if he could gain two or three feet at a pull; for nothing discouraged his horse, and it was difficult to load him so that he could not move a little. These facts are perfectly well known to many

persons now living at Lyndon; and we mention them, not from any intrinsic interest they may possess, but, having said that Sherman was slightly hollow-backed, we thought it necessary to show, that, if so, his back was by no means weak.

"Such was the kind of service to which Mr. Sherman put his horse from the time he was four years old until he was about ten, when he sold him to Stephen C. Gibbs of Littleton, N.H., in 1819. Mr. Gibbs kept him one year, and sold him to John Buckminster of Danville, Vt.; but Mr. Gibbs had charge of him two years longer. After this, he was kept at Danville and vicinity until 1829, when he was purchased of Mr. Buckminster by Mr. John Bellows of Lancaster, N.H. The summer of 1829 he was kept at Littleton, N.H., in charge of Stephen C. Gibbs; in 1830 he was kept at Dover and vicinity; in 1831 he was at Col. Jaques's Ten-hills Farm, Charlestown, Mass.; in 1832 he was at Dover and Durham, N.H.; in 1833 he was kept at Lancaster, N.H.; and in 1834, at Dover and vicinity. He died at Mr. Bellows's stable, in Lancaster, the 9th of January, 1835. The cause of his death is unknown. He was left at ten o'clock in the morning apparently perfectly well; and, at one o'clock in the afternoon, he was found dead.

"With the exception of some slight indications of age, he was apparently as free from every species of blemish or infirmity the morning of the day he died as when he was foaled. His skin has been preserved

and stuffed, and may still be seen at the stable of Mr. George Bellows, at Lancaster, N.H.

"Sherman had not so bold and resolute a style of action, and was not so nervous and high-tempered, as Woodbury; nor was he, in the language of the stable, so well 'finished up:' but he was more tractable; was exceedingly spirited, and a keen, rapid driver; possessed great powers of endurance, a free and noble spirit that needed neither whip nor spur, and courage that never flagged.

"Woodbury — sometimes called the Burbank Horse, and known in Windsor County as the Walker Horse — was foaled the latter part of May, 1816, the property of Lyman Wight of Tunbridge, Vt. It has been said that he was raised by a 'Mr. White;' but this is a mistake that would easily occur. The pronunciation of the two names is almost the same; and, the latter being much more commonly used, the name has been misunderstood. Woodbury was sired by the Justin Morgan. Of the blood of his dam we are unable to learn any thing. At the time the colt was foaled, Mr. Lyman Wight was a young man, about eighteen years old; and the dam belonged to his father, William Wight, who had loaned her to his son for the purpose of raising a colt. She was five years old when the colt was born. Mr. Wight purchased her, the year before, of a Major John Moulton of Bethel, Vt., who brought her into that town. She was large, being over fifteen hands

high; and weighed about eleven hundred pounds: she was of a deep bay-color, with black legs, mane, and tail, a small white spot in the forehead, and no other marks. She was not very compactly made, and was rather flat-ribbed; but she had an excellent chest, fine shoulders and hips, and excellent limbs. Her head was very fine, ears good, and mane and tail beautiful. She carried her head high, was a very free, spirited driver, and was called fast at that time. She both paced and trotted, generally starting in the former gait, and, after going a short distance, changing it for a trot. When trotting she made a fine appearance, and, going fast, attracted much attention. She was a very fast walker. The autumn after the colt was foaled, about the usual time of weaning, Mr. Wight sold him to David Woodbury of Bethel, Vt., for fifty dollars. Mr. Woodbury kept him until grown, and sold him to his brother John.

"John had a taste for good horses; and in his hands the horse began to be a little known. He kept him at Bethel and the neighboring towns a few years, and sold him to Ebenezer Parkhurst, who kept him in the same neighborhood until March, 1826, when he sold him to Simon Smith and William Walker of Hartland, Vt., for five hundred dollars. Soon after this, Messrs. Smith and Walker dissolved partnership, Mr. Walker keeping Woodbury. Mr. Walker had a passion for horses. He saw and appreciated the remarkable features of the Justin Morgan and his stock, and took much pains to bring them into notice; but, like many a pioneer in a

new business, he could not make it pay: and, being a man of small means, he was compelled to 'sacrifice his horse,' as he terms it, 'for the insignificant sum of four hundred dollars;' and sold him to Peter Burbank, Esq., of Newbury, Vt. Mr. Burbank was a lawyer, and not a farmer or breeder; but he was fond of horses, and had a discriminating eye for their good points; and having seen the Woodbury at Keene, N.H., he (in his own words) 'fell in love with him at first sight.' Fearing to trust to his own judgment alone, he consulted Jesse Johnson of Bradford, Vt., — a gentleman who not only possesses excellent taste as to the proper style and general figure of a fine horse, but has also that close, critical eye that seems almost at a glance to take in all the minute defects of form that a more careless observer might fail to discover. Mr. Johnson did not fail to perceive the extraordinary merits of the horse, and advised Mr. Burbank to purchase him; which he did the 20th of May, 1830. From this time until 1836 he was taken charge of by Jesse Johnson and Brothers, and kept at their place in Bradford, Vt., during the winter and latter part of the summer and autumn of each year, and one or two years during all the seasons. During the years 1830 and 1831, he remained at their stable at Bradford. The season of 1832 he was kept at Keene, N.H.; the season of 1833 he was kept at Burlington, Vt.; and the seasons of 1835 and 1836 he was kept at Bradford and vicinity. In September, 1836, Mr. Burbank having

died, the administrators of his estate sold him to Norman Baglee of Alabama, who took him to Gainesville in that State, where he died in 1838, being twenty-two years old.

"Woodbury was fourteen and three-quarters hands high, and weighed from nine hundred and eighty-eight pounds to ten hundred and forty pounds. He was weighed several times; and these two statements of his weight at different times are the extremes. Many persons who have frequently seen him weighed say they never knew him weigh more than ten hundred and thirty, nor less than ten hundred and fifteen pounds. He was a dark, rich chestnut. His off hind-leg was white from the foot half way to the hock; and he had a white stripe in his face, beginning at the edge of the upper lip, filling the space between the nostrils, and extending more than half way to his eyes. His mane was not very thick or long, and was lighter than either of the others: still it was full. His tail was cut off when a colt, and left about ten inches long: the hair was very full and curly. Both mane and tail were about the same color as his body. The hair on the body was fine, short, and soft. He was close and compactly built, with heavy quarters and deep flanks. His chest was good, and the shoulders finely shaped. He had a short back, and broad, sinewy loins. His legs had some long hairs on the back-side, but were well shaped, somewhat larger than Sherman's, and not so large as Bulrush's. His head was small and lean, with a fine,

firm muzzle; the nostrils very large and full; face straight, very wide between the eyes, which were dark hazel, very large and prominent, and showed no white around the edge of the lid. His ears were small and fine, but rather short, and set somewhat wider apart than many would consider consistent with perfect beauty. His style of action was bold and resolute; and his temperament was so nervous, that, when taken out with a bridle, it was almost impossible to keep him still. He was a good driver, and appeared well in harness; but he appeared to the best advantage under the saddle. Militia colonels and generals were eager to ride him; and no 'musters' or reviews could pass without his being seen: in his case, to be seen was to be admired. His disposition was pleasant and playful.

"As has been said, he was taken to Gainesville, Ala., in the autumn of 1836, being then twenty years old. He was shipped from Boston on board a small sailing-vessel. He suffered much from the long and stormy passage, and never fully recovered from the effects of it. It is altogether likely that the climate and food did not agree with him; for neither was such as he had been accustomed to: however this may be, it is certain he continued to fail until he died, in 1838. Woodbury was the largest of these horses, and possessed in a greater degree the bold, fearless, and showy style of their sire. He was more nervous and less tractable than Sherman, better under the saddle, not so pleasant in harness, and, we are inclined to think, hardly as good

a roadster. His form was more symmetrical than either of the others. His breast was not so full and prominent as Sherman's. He was deeper in the flanks, and better quartered. No horse ever had less fear. Martial music only roused him; the firing of guns in no way disturbed him; waving flags and gay uniforms seemed hardly able to attract from him a single glance; and he moved about as if he were himself the principal object of attraction, and the cause of all the attending excitement and display.

"Bulrush was foaled in 1812 or 1813. Of this we think there can be no reasonable doubt; although it has been stated that he was foaled in 1816. We have consulted persons who owned both Bulrush and Woodbury; and they all agree that Bulrush was the older of the two. Now, there is no question but that Woodbury was foaled in 1816; and, if Bulrush was older, it is altogether probable that he was more than one year older: for the Justin Morgan was taken to Claremont early in the spring of 1814, and remained there one year; and the dam of Bulrush was owned in Randolph, Vt., the year he was sired; so that, in the absence of any other testimony, we might very reasonably conclude that he was not foaled later than 1814. But the testimony of Chester Belknap is clear and direct, that he was foaled in 1812. Mr. Belknap was married in 1819. His father, who raised the horse, owned him at that time, and soon after sold him to

Abel Densmore of Chelsea, Vt.: he was then seven years old. This statement of Mr. Belknap's in relation to the age of Bulrush is confirmed by many persons who knew him well; and there can hardly be a doubt that it is correct. The blood of the dam of Bulrush is unknown. She was a dark bay, with black legs, and heavy black mane and tail. She was low and compact; had heavy limbs, with large joints; neck rather long; a good head, but did not carry it up very well. She was a sharp trotter, but was not a very spirited driver. She was said to be, and had the appearance of being, part French. She was owned by Mr. Moses Belknap of Randolph, Vt., at the time Bulrush was sired. Mr. Belknap obtained her of a Mr. Boutwell, a teamster from Montpelier, Vt., who worked her in a six-horse team, hauling merchandise and produce between Montpelier and Boston. She was a very rugged, hardy, enduring animal; but Mr. Boutwell thought her too small for his business, and he exchanged her with Mr. Belknap for a larger horse. She weighed about ten hundred pounds. Mr. Belknap sold her late in the winter, when in foal by Justin Morgan, to Ziba Gifford, Esq., of Tunbridge, Vt.; Mr. Gifford to keep the colt until four months old, and return it to Mr. Belknap; or pay thirteen dollars more, and keep it. Mr. Gifford preferred to return the colt; and did so.

"Mr. Belknap kept Bulrush in Tunbridge and vicinity until 1819, when he sold him to Abel Densmore of Chelsea, Vt. Mr. Densmore sold him to Darius Sprague

of Randolph, Vt.; who sold him, March 8, 1826, to Messrs. Simon Smith and William Walker of Hartland, Vt., for three hundred and fifty dollars. They kept him at Hartland and vicinity until they dissolved partnership in 1829, when Mr. Smith took Bulrush to Maidstone, Vt. He kept him one year at Chelsea, and two years in the State of Maine; and in 1833 sold him to Jesse Johnson and Brothers of Bradford, Vt. The season of 1833 he was kept at Bradford, Vt., and Bath, N.H.; the season of 1834, at Keene, N.H.; the season of 1835, at Lyme, N.H., and Bradford, Vt.; and the season of 1836, at Burlington, Vt. During the winter of 1836 and 1837 the Messrs. Johnson sold him to Messrs. Blake and Foss of Chelsea, Vt., who kept him in that town until 1842, when they sold him to Lewis Jenkins of Fairlee, Vt., who kept him at Fairlee until he sold him to F. A. Weir of Walpole, N.H., who kept him until he died, in 1848.

"Bulrush was a dark bay, with a few white hairs in his forehead, and no other marks. His legs, mane, and tail were black; and his mane and tail were very heavy: the former came down nearly to his knees, and his foretop came down to his nose. His tail was cut off when young, and left about nine or ten inches long. His legs were large, and had some long hair; were close-jointed, broad, flat, and exhibited a more striking development of muscle than either Woodbury's or Sherman's. His back was not so short as either of the others'; but it was very broad, and he was freer from

any imputation of sway-back than any of his brothers; though, towards the close of his life, he indeed fell away in his loins, as is always the case in old stallions. His hips were very good, but not so long as Sherman's; and he was not so well quartered as Woodbury; but he was deeper in the chest than either of them. His shoulders were thicker, and not so well placed; and his head and neck were not so well set up. He was not so proud, bold, and lofty in his carriage, as Woodbury; and he had not Sherman's short, nervous step, and tractable but high-spirited temper: but he was a sharp, quick driver, and a faster trotter than either of them. He was a little inclined to be cross; but was not fierce, or in any respect unmanageable: on the contrary, he was very kind in harness, always working pleasantly wherever put. His most remarkable characteristic was his power of endurance. For this, we think it is generally admitted, he had no rival; and his extraordinary lastingness has become proverbial where he was known. His stock bear a strong resemblance to him, and are very numerous; are mostly dark bay without marks, never sorrel or light chestnut. Occasionally a dark gray, from a white mare, may be found. Bulrush was about fourteen hands high, and weighed about one thousand pounds.

"Bulrush, Sherman, and Woodbury were treated very much alike. Until after ten years old, each of them was employed most of the time at the ordinary team-work of a farm; and at no period of their lives did they have any more care than the common horses of

the country, and never had much knowledge of thick blankets and warm stables, but were early inured to the labor and hardship, fatigue and exposure, incident to a new and mountainous country and a cold climate. It is not improbable that the cold, dry atmosphere and pure water of our mountains has contributed as much as the rich pastures of our valleys to the stoutness, courage, and lastingness of our horses.

"We have thus slightly sketched the more obvious distinctions and general characteristics of these celebrated sons of the original or Justin Morgan. While they differed in the particulars we have herein set forth, (which difference was rather in the degree than the nature of their qualities), they all possessed the great and striking features of their distinguished sire. The same compactness of form, great muscular development, hardy, rugged constitution, docility and tractableness, short, easy, rapid step, eager ambition, and lofty courage, so remarkable in him, were found in each of them in a high degree. Through these noble channels the blood of the Justin Morgan has been poured profusely into the hitherto hardy stock of Vermont, conveying not only the very form of the great original, but all his unrivalled vigor, grace, and ease of motion, combined with his docility and matchless courage."

To resume our remarks, I would observe that we must consider that New England has never had any stock-horses able to perpetuate their name and fame

save those of Morgan blood. Hiram Woodruff, in his "Trotting-Horse of America," says, p. 283, —

"The Eastern States have always been a fine nursery for trotting-horses. The fine action of the Morgan breed, and their good tempers and sound constitutions, helped a great deal; but New England was still more largely indebted to the two sons of Messenger, — Hambletonian and Bush Messenger: I mean the one that went to Maine."

Now, I would like to ask what ground is there to say that New England is more indebted to the Messenger than the Morgan blood? Why, there was not strength enough in the Bush Messenger to establish a family, or even a branch of a family. Where is there a Messenger stallion in Maine that traces back to the original Bush Messenger as Gen. Knox traces back directly to old Justin Morgan? What Messenger horse in Maine has ever gotten a Gilbreth Knox, or Camors? Go to Vermont, and find a descendant of a Hambletonian horse that has ever trotted a mile in 2.15 as Ethan Allen has. The fact is, there are no such descendants. The words "Hambletonian" and "Bush Messenger" can be seen very plainly on paper; but, when you come to search for stallions descended from them, where are they? Is there one in Maine? Can you find one in New Hampshire? What town in Vermont shall I visit to see one? Has Massachusetts any? How many are there in Connecticut? The fact is, New England has not, and never has had, any famous stock-horse outside

of the Morgan family. Look over the field and at the list to-day. Gen. Knox and his great son Gilbreth, Winthrop Morrill, Fearnaught, Taggart's Abdallah, Ethan Allen and his wonderful stock-getting son Lambert, Young Morrill, Woodstock Morrill, Gen. Lyon, Defiance, and many others, all trace back straight to old Justin Morgan. Now, over against this list I ask the reader to put the Bush-Messenger stock or Hambletonian stock, to which some people think New England is so indebted for her fast horses. The truth is, the Morgan family has no rival in New England, and never has had. The Clay stock and the Hambletonian stock may, in the future, enter the field in competition; but, up to this time, the wreath belongs to the Morgans.

I have already shown that three of the four great elements needed to make a perfect horse — viz., beauty, docility, endurance — the Morgan horse had and has. But men say, "The Morgan horse had no speed." The ignorance or audacity that prompts this assertion is simply astounding. The truth is, no family of horses in America has ever produced so many fast trotting-horses as the Morgan. If you ask what I call a *fast* horse, I respond, A horse that will trot a mile in a public race in 2.40 is a fast horse. Of all the races trotted this year in public, it is safe to say that the average rate of speed will not be under 2.40. I take it, therefore, as a standard; and a fair one it is too; and, in proof of what I have said, I refer the reader to the "record" of time made by Morgan horses on pp. 300, 301.

I do not wish to have any suppose that I regard the Morgan family of horses as sufficient in itself to meet the wants of the future in respect to breeding. The perfect horse, or rather the family of perfect horses, is yet to appear. That it will appear in due time, I have no doubt; but it will not appear while ignorance and prejudice, or mere chance of locality, is allowed to dictate the selection of dam and horse from which the foal is to spring. So long as a Fearnaught man can see nothing valuable in a Knox or a Lambert, or a patron of Hambletonian will not admit that great excellences exist in the Clays, — so long as such arrogant and nonsensical opinions prevail, the perfect horse can never be raised, unless as an accident; but when the breeders of the country will drop their foolishness and envious fear one of another, and come together as friends, and students of those laws which govern the propagation of animals, and seek to assist, rather than thwart, each other, then will the first step be taken in that path along which the enterprise can walk to its highest success. For one, I regard myself happy in this, — that I am free from prejudice, devoid of envy, and know no other rivalry than that of generous and candid emulation. In my native State, where are my stables, are several stock-horses worthy of public patronage, — Buckingham, Thomas Jefferson, Rysdyk, Mambrino, Ashland. These horses are not enemies, they are allies, of mine. From their get I look to receive my best crosses in the future. The bloods of Bashaw, Hamble-

tonian, Lexington, are precious bloods to me. They will re-enforce my stables with strains otherwise unattainable. I would that Connecticut had twenty such animals! They would add fifty per cent to my chances of success. This, as I understand it, is not only honorable in point of feeling, but wise in point of business. The owners of celebrated stock-horses can only be enemies while they are ignorant. The moment that one is intelligent enough to perceive and appreciate the lack of certain excellences in his family of colts, that moment he naturally resorts to the owner of some other breed for assistance; and so financial profit and friendly companionship run into each other, and become one.

I have been asked to write my impressions touching the proper families which could be mutually benefited by intercrossing. I know no reason why my views should not be frankly stated; and I propose to write them out for the reader's inspection, letting them go for what they are worth.

Of the Hambletonian family — which, of course, is the same with the Abdallahs, save in name — I have this to say: Many of the old horse's get are no honor to him, and unfit for stock-purposes. His best sons are those out of Star mares, or thorough-breds of other families. With such mares for dams, his get is remarkable, and worthy of all patronage by the public. With his third and fourth rate sons no breeder should have any thing to do. As a family, they are open to the charge of being too heavy and coarse-looking for beauty, with

head, ears, and legs larger than they should be; over long in the back; and although they are great striders, yet their heels stay too long under the wagon. A first-class son of the old horse is likely to be a prize: the others should be let severely alone.

In respect to the Clays I have this to say: That certain parties have seen fit to attempt to underrate their sterling qualities, and to fasten upon them an odious epithet. It has been a sweet saying in certain mouths that the "Clays wouldn't stick." Hiram Woodruff discovered that George M. Patchen would "stick" a little too near him for comfort, even when he had that marvel of speed and bottom, Flora Temple, — and in her highest condition too, — ahead of him. I had the pleasure of seeing Goldsmith's Maid trot her greatest heat at Mystic Track when she made the mile in 2.16¾; and I saw a Clay mare named Lucy — not an entire stranger to the trotting-public, I think — stick so close to the flying beauty, that the least waver or let-up in her gait would, up to the very moment she darted under the wire, have lost her the race. So long as the name of George M. Patchen, — the only horse that could ever keep his nose to Flora Temple's saddle-girths the mile round, — and Lucy, — the only horse living able to keep at the shoulders of Goldsmith Maid from wire to wire, — so long as these names remain, the man who says that the "Clays will not stick," but are "quitters," is a fool or a slanderer; for Patchen was the greatest horse, save one, of his day, and Lucy is the fastest horse, save one, in our time.

The Clays are a valuable family; and no one can gainsay it. I would cross them with the Morgan family. A Clay mare crossed with Ethan Allen or his son Lambert, or Taggart's Abdallah, would, in my opinion, be exceedingly likely to bring forth a foal whose speed would only be rivalled by his beauty. The same cross essentially would be gotten by coupling the mare with Gold Dust, in whose veins the blood of the Morgan and the Arabian happily unite. I think New England would be greatly the gainer if several first-class Gold-Dust and Clay stallions were brought within her borders.

The Morrill tribe is a branch of the Morgan family, and quite largely re-enforced with Messenger blood; the original Morrill horse being a great-grandson of imported Messenger. They are, as a class, a trifle coarse, and of over-size; but they are marvels of muscular development and of high and generous spirit. They are born trotters, and of most imposing action. The Fearnaught branch of this family is the most noted, and represents the happy result of coarsenesss bred away, and speed and vigor retained. I think a first-class Morrill filly, bred to Taggart's Abdallah, or Lambert, would produce a colt that would gladden a horseman's eye.

The Knox horses belong to another branch of the Morgan family. They are marked strongly with the trotting-instinct. Gilbreth Knox is one of the very fastest stallions of the country, of fine appearance and most excellent disposition, and should be kept as a stock-

horse. It is a public loss when such an animal is monopolized for private purposes. The Knox colts are apt to be rather coarse, especially about the head; and should be crossed with fine-bred, gamy-looking mares. Their friends must understand that *speed* alone is not enough to make a colt valuable to-day, save for pure gambling-purposes; that beauty must be borne in mind when breeding. A coarse head, big ears, small eyes, and long hair, are detestable in a true horseman's eye, and should be bred out of the family which happens to be cursed with them just as soon as it is possible to do it. The fact is, the Messenger family was a coarse-looking family. The old Messenger was a coarse horse: his most famous descendant, Abdallah, was coarser yet, with a big head, little or no mane, a rat-tail, an overplus of bone-substance, and an ashen-colored rump. This ancestral coarseness is continually cropping out in his descendants. There is more than one colt in America with the homely Abdallah body and Messenger head, without their speed. *Thorough-bred* does not always mean beauty by a long-shot, as the lop-eared Melbournes and the coarse-looking Messengers prove. Breed an Abdallah mare to a high-bred Morgan stallion, and you will be very likely to get a colt with the beauty of the sire and the speed of the dam. If you do, you have got a "hit" indeed.

But I will detain the reader no longer with my speculations. The task which has consumed the leisure of years is completed; and I have, at least, the author's

pleasure, — that his work at last is done. Amid other and graver cares, its composition has been a delight. My mind has felt, in writing it, like a boy at play. It has revelled in what to some might seem a toil; and even now it hovers over the closing page as a bee might hover around a flower to which it had given nothing but the music of its presence, from which it had received food and sweetness for cold and dreary days. If, while thus ministering to my own happiness, I have added any thing at all to the common good, in adding to which man finds his best and only lasting monument, I am more than repaid.

AGRICULTURE AND THE HORSE.

BY GEORGE B. LORING.

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When, in the early spring of 1864, a large body of the representative farmers of the New-England States assembled at Worcester, in response to my call, for the purpose of organizing the New-England Agricultural Society, it was undoubtedly true that no man of all that enterprising number had any definite idea of the precise object, or of the possible result, of the proposed organization. New England was then, as it is now, full of local and state agricultural societies, all engaged in useful labor. But the suggestion that new energy might be infused into the agricultural community by a new association, in which a broader field might be represented, in which a wider interest might be awakened, and in which a larger class of teachers and learners might be gathered together, was enthusiastically accepted; while the problem was left to work itself out in its own way. The belief that something might be done, both by investigation and by experiment, for the benefit of agriculture, was unanimously

entertained. It is probable that an interchange of thought among the men of New England had its charms for many, especially for that large class of agricultural debaters who will not, under any circumstances, allow any question to be definitely settled. There were those who looked forward to the publication of an elaborate, well-prepared, scientific periodical of agricultural literature, in which the most accurate deductions and laws might be found. An enlarged acquaintance among the farmers of New England, a better knowledge of the various modes of agriculture adopted by them, a kind association with each other superior to all differences of opinion, had great temptations, and were full of pleasing promise to many. Those gentlemen who represented the agriculture of Maine were rejoiced to bring their observations upon the horses and grass-lands and cattle and potato-patches of that State into a wider field: and as they enlarged upon what they had done, and were doing, along their varied seashore, and in the valleys of the Kennebec and Penobscot and Sandy Rivers, they listened with intense interest to the wise discourse of the merino-kings of Vermont upon the subject of sheep-husbandry; and to the views of the tobacco-growers and market-gardeners and fruit-raisers of Massachusetts upon the best methods of wringing from the soil the largest and most profitable crops; and to the discussion of the herdsmen of Rhode Island and Connecticut upon the comparative merits of their Short-horns and Devons and Ayrshires; and

to the well-expressed opinions of the Nestor of New-England agriculture, as he told of all the various economies of his own State of New Hampshire, with her hard soil and industrious people. New light poured in from every quarter. It became evident that nothing would satisfy this inquiring and busy multitude but an exhibition of their own cattle and crops, and implements of husbandry; and that no questions could be settled by them, except through observation and investigation. The exhibition at Springfield, the first year of the organization of the society, was remarkable for the intellectual and material wealth which it brought together. It was a new day for New-England farming. The debaters were out. Agassiz, for the first time, presented his wealth of scientific culture in his discussions with the practical breeders and cultivators. Gov. Andrew poured forth the greatness of a great agricultural address. Many an obscure herd came up for the honors of the occasion. Horses as yet unknown to fame sought the "bubble reputation" there for the first time. New-England ingenuity covered the ground with implements new and old, tried and untried. The cultivators of crops brought out their most startling products. Representatives of the fabulous flocks of Vermont came forth to demonstrate the value of their golden fleeces. The occasion was memorable for all the domestic birds of the air, and beasts of the field.

Among the most attractive and absorbing of all the

topics which occupied the attention of those who sat around the cradle of the New-England Agricultural Society was the Horse. The precise relations which the horse holds to agriculture; the profit to be derived from breeding this animal; his true value in an economic point of view; the exact utility of an animal which matures slowly, leads an expensive life, is not used for food, has a sentimental as well as a useful existence; how best to breed him, and feed him, and shelter him, and shoe him, and drive him; how to admit him into the agricultural circle, — these subjects occupied, and somewhat confused and disturbed, the minds of those agricultural fathers assembled there. That there was deep respect for the horse there, no one could deny. That there was considerable doubt about him, was very evident. That there was a great deal of ignorance with regard to him, was manifest. That he was very much misunderstood, was apparent. When the question was asked, how to breed a really good horse for a specific purpose, — a horse of intelligence and patience, and courage and sagacity, and good physical powers, — it was delightful to see with what sublime simplicity the great disciple of the great Cuvier sat and listened to the profound deductions of the practical breeders who had kept practical stallions, whose success they were anxious to attribute more to their own practical wisdom than to the occasional good fortune which will always attend a multitude of chances. When the question of feeding arose, it was surprising to see by

what various dietetic processes a good colt could be brought to the most complete and thorough maturity. When the problem of an ailing dumb beast, ignorant of its own sensations, and incapable of communicating its story of aches and pains to others, came up, the multifarious remedies astonished an observing mind more than the diverse and complicated diseases. That there was a little confusion now and then cannot be denied, but no more than may be found on almost every subject in a large general assembly. There was a good deal said about the value of the thorough-bred as a trotter, and the worthlessness of cold-blooded horses without pedigrees for any purpose. There were a good many claims put in for thorough-blood in behalf of honest New-England horses whose lineage could be traced for generations into and through all the barn-yards of their native districts. Many a strong-footed, stout-limbed, swinging-gaited, ample-headed, coarse-haired horse, going at his track-work with the determination of a prize-fighter, and measuring his strides with his strong shoulders and quarters as regularly as the pistons of a locomotive, was found to be descended from some daisy-cutting son of Godolphin, brought over by some unknown army-officer, or sent over to colonize a new world. The valuable services of a remarkable "red" horse as a stock-getter in one section were elaborately set forth. An account was given of a "sorrel horse with black points," which had travelled a hundred miles in ten hours, "two men to

a wagon." And a great deal was said about a Percheron stallion, which weighed nearly two thousand pounds, and could trot a mile in less than three minutes.

It was during the repeated and prolonged sessions and intricate debates which attended the early life of the New-England Agricultural Society that an informal assembly of its members found itself brought together, more by accident than design, at the residence of one of the friends of the association. There was no special arrangement about the proceedings. Some one present, remembering that our old friend Mr. Alcott never opened one of his charming mystical conversations without calling on his audience to "come to some order," had secured just organization enough to bring the meeting to a working-capacity. The discussion was not systematic; perhaps not as well defined and well sustained as it should have been. The deliberations were of that fragmentary description which so often follows long and earnest debate, and precedes "the conclusion of the whole matter." Every branch of agricultural investigation and of an agricultural exhibition had been carefully explored, when the chairman casually remarked that he thought the Horse should receive the devoted attention of the best men of the society. "Our exhibitions must be made attractive," said he; "and the profits to be derived from a judicious and intelligent breeding of horses are so great, that we must endeavor to bring forward the horse as

a matter of business to an agricultural community, as well as of pleasure to the patrons of our society."

This remark, which seemed to be innocent enough, and had, in fact, been often made before without attracting particular attention, appeared to fall with unusual force upon the minds of the little assembly, and to displace the charming listlessness which pervaded it with something slightly sterner and more thoughtful.

The Hon. Justus Jones was the first to speak. He had not taken an active part in the discussions thus far, but had impressed his associates as a modest, moderate gentleman, desirous of securing the success of the society, and placing the agricultural interests on a firm and controlling foundation.

SPEECH OF THE HON. JUSTUS JONES.

"Mr. Chairman," said Mr. Jones, half rising, and then settling back into his seat, as if his audience was too small for an upright orator, — "Mr. Chairman, I have listened to the proposition, or rather the remark, which you have just made; and I am not prepared to say that you are not correct. But I am not much of a horseman. There has been but little love of horses in my family. We have never owned a very good horse. In fact, the stock of my farm has never been large; and I cannot say that it has been in any way remarkable. Large, heavy oxen are expensive: a small yoke answers every purpose. Medium animals, fairish cows, oxen that do not command fancy prices, are the best, as we think,

for the general run of farmers. We sell some hay and some wood, and we find small cattle and a moderate horse are best for this business: there is less risk in them; and they answer just as well. But the risk of the horse we never run if we can avoid it. For one, I think I am afraid of horses. I never feel exactly easy about them. They seem to be a very uncertain animal. They see things; they stumble; they want a master. They are adapted to all bad occasions; are at home in a muster-field just as much as in a cornfield, at a fight as at a church. The truth is, I do not understand horses, and want to have nothing to do with them. I wish they did not exist. And as to premiums for stallions and mares and colts, — why, I remember with pride that the old agricultural society to which I belong — one of the first in the country — gave no premiums for horses during the first fifteen years of its history. I have been told that there is one now in existence which gives the smallest possible space for this uncertain and unscrupulous animal. I suppose it would not do to run a society without them. But then, sir," — and here Mr. Jones rose to his feet, — "what repose would follow their expulsion from the society of those graver animals which belong by right to a cattle-show? Imagine, sir, a return to those peaceful hours when horses were unknown, — to the palmy days of Elisha, who was found ploughing, not with horses, but with the patient oxen; to the days of Job, who revelled in oxen and asses; to the times when a horse was so mean and unworthy,

that, while man was forbidden to covet his neighbor's ox and his ass, no such provision was made with regard to his horse. The horse, sir, has always been a type and symbol of every thing proud, imperial, and aggressive. He may submit to the hardships of poverty and toil; but he is most at home among the lordly and the aristocratic. Nowhere in history, sacred or profane, is he associated with the gentler and more lowly qualities of man, or devoted to the truly useful service of life alone. While all our other domestic animals performed their part in the daily labor of society, and either bore the priest to the temple, or were found worthy of being offered up a sacrifice on the altar, the horse had his 'neck clothed with thunder;' he smelled 'the battle afar off;' his joy was in 'the thunder of the captains, and the shouting.' Never under any Christian interpretation has he found his way into the best of creation; but through the Oriental imagery of the Mussulman alone, responsive to the pseudo-divinity of Mohammed, has he been elevated to his lofty position, pretender that he is, among the beasts of the earth.

"It was an Arab chieftain, swelling with Mahometan arrogance, bloated with Mahometan superstitions, gritty with the sands of the desert, who set God to work making a horse out of the south wind, and binding 'fortune on his mane,' and reposing 'riches in his loins,' and making him with the 'sign of glory and of happiness,' and then declaring to the misguided Adam, who chose this tempestuous creature in prefer-

ence to the 'borak,' 'Thou hast chosen thy glory and the glory of thy sons: while they exist, my blessing shall be with them, because I have not created any thing that can be more dear to me than man and the horse.' This may be all very well, sir, for an Arab, but not for a descendant of the Pilgrims; not for a man who believes in a republic of humanity and religion and letters. To the warrior and the usurper and the nomad I resign the horse, with all his thunders, and his 'Ha, ha's!' and his wild and mysterious spirit. I suppose we must endure him; but I protest against him. I have no doubt he will be present at our exhibition in full force. I have no doubt, that, when he gets there, he will parade himself up and down before the multitude, and swell out beneath their empty plaudits, and persuade himself that he is really held in higher esteem than those more substantial and useful animals, without which man would starve and perish. I have witnessed just such vanity as this, sir, in another sphere; and I know how, for a season, it will flourish. I submit, therefore, ay, more than that, I rejoice, that while the calm and substantial and solid and real in the animal kingdom are provided for those of us who look beneath the surface, and estimate all things at their true value, the fleeting and flashy splendors of the passing cloud are bestowed upon the fickle and impressible and volatile. Let us have the horse, then, if we must; and let him serve to attract the crowd for the pecuniary

benefit of ourselves who are engaged in this great work. As an instrument in the hands of Providence, which 'maketh even the wrath of man to praise him,' I accept the evil. But, for myself, I shall devote my best faculties to the development of the sturdier and more reliable branches of our business, — to those dumb friends of ours who neither startle us by their eccentric impulses, nor betray us by their innate follies, nor drag us to destruction by their uncontrolled and uncontrollable ambition, fatal alike to friend and foe, but who nourish us from the cradle to the grave, who are associated with our most peaceful hours, who disturb not our mental and moral repose, who neither flatter our vanity nor inflate our desires, whose massive and imposing usefulness will always be remembered by the hungry and the thirsty, whose simple and insensible stolidity will be valued above more glittering qualities, and whose immortal torpor will endure

> 'When victors' wreaths and monarchs' gems
> Shall blend in common dust.'

"Mr. Chairman, I am but a common farmer. It is true, a portion of my time is devoted to the public service, to the advantage of the State, I trust, as well as of myself. But I am a farmer, believing in the good old ways of the fathers, whose exhausted farms we of this generation inherit. I believe in that mode of farming, as I do in that mode of railroading, which will give the largest returns with the least labor, the

simplest processes, and the smallest risks. I suppose I may be called conservative; and I must confess I dislike every thing which is capable of running away. I acquiesce in a gale of wind; but I dislike it. So I acquiesce in the horse; but I don't like him. I have said more than I meant to say when I commenced; perhaps more than I ought to have said. But public service, you know, Mr. Chairman, tends to develop the powers of expression, and to enlarge those intellectual faculties without which this world would indeed be but a 'fleeting show.' I beg pardon of the gentlemen present for my extended remarks; but I feel that I have but half discharged my duty, and have said less than half of what I desired to say. I hope I have not injured the horse, or discouraged the society. My disposition is 'to hold to the one, and despise the other.' I shall acquiesce, however; and I trust and pray that our Troy (excuse the classical allusion) may not fall as fell the ancient city, when that animal which I dread so much passed through its ill-starred gates."

Mr. Jones sat down somewhat flushed, a little perplexed, and with an expression of mingled self-approval, defiance, and injured innocence, which was not pleasant to such a healthy assembly as he had just addressed. Everybody was silent. They had no idea Mr. Jones was so eloquent a gentleman: they had forgotten his "public service." They did not agree with him; but

they did not know exactly what to say. It was a new view of the horse question. And they were somewhat stunned by the thought that they ought to return to the days when sheep and oxen and asses occupied the largest attention; when the merits of cows went unrecorded, the bull was generally ignored, swine were forbidden, and the horse was consigned to a vain and wicked world for the gratification of vanity and wickedness alone. It is doubtful whether any reply would have been made to Mr. Jones, except a mild expostulation from the Chair, and a murmur in one corner of the room about "a white mare," and "my little girl's pony," which had a very warm and tender tone in it, had not Mr. John Osgood been present, and felt moved to take up the matter where Mr. Jones laid it down.

Mr. Osgood was a fine specimen of a New-England farmer. His ancestors had been landholders for generations back. They were men of influence too. One of them was the first postmaster-general under Washington; another had held high position in one of the oldest and strongest towns in Massachusetts; another had filled to overflowing one of the most powerful of the old New-England pulpits; another was the trusted friend of the first great chief justice of Massachusetts; and another was a great farmer, owned broad lands, and was famous for his flocks and herds and crops, as well as for his stables. Mr. Osgood himself, it was said, started from the smallest possible beginning. His only patrimony was the inheritance of blood to which

I have alluded, a thoroughly good academical education, a stalwart frame, a sound mind in a sound body, and a fresh and vigorous spirit, which led him along the agricultural path of his ancestors, rather than along their commercial or political or legal or theological highways. Why his father was poor, belonging as he did to such a thrifty race, nobody seemed to know. There will be such in every family. He owned a farm somewhere, — an unrecorded farm, which no committee on farms had ever visited, and which had faded and faded under the touch of negligent cultivation, until every thing about it — people, buildings, animals, and crops — had a languid and sickly air. This farm Mr. Osgood left in early life; and we are told that he left it in early spring, on foot, driving his few sheep and a cow or two before him over the deep and heavy roads of that season, travelling with less fatigue than his animals, and stopping at last for his future home in one of the remote, verdant valleys of Vermont. In this home he had prospered. By the exercise of good judgment in the breeding of his flocks, and by the application of rules which keen observation taught him, in the absence of scientific laws, he improved the quality of his sheep, until they became the standard, and gave him a reputation with the Bakewells and Collings of the Old World. His cattle ranked with the best; and, in his mind, the best were models of symmetry, thrift, and quality. The highest type of the American horse could be found on his farm, — an animal as patient as he was courageous,

as enduring as he was fleet, as useful as he was ornamental, strong at the plough and untiring on the road, vigorous, hardy, and cheerful, an honor to his race, and a credit to his owner. Mr. Osgood's acres and his household increased together. His family smiled all around him within doors, and his farm smiled all around him without. His wife — a comely, industrious, intelligent, sweet-voiced woman; such a wife as can only be developed under the sunlight of a manly and kind and considerate and generous husband; such a wife as only such a husband can have in all her attributes, the mother of many sons and daughters — kept his household in neatness and good order, and cherished within that home all the virtues and economies which make home sweet and dignified. He had no political ambition, had never been engaged in "public service," had no "honorable" prefixed to his name; but he went to church, sent his children to the best schools, paid his taxes without complaining, and had offered up one of the best and bravest of his boys on the altar of his country, — a far-off, unknown grave holding the sacred ashes, while the father and mother carried calmly and patiently the great sorrow in their hearts.

When Mr. Jones had seated himself, after his startling address, Mr. Osgood, who, having been prosperous himself, felt moved to tell others how it was done, and had, for this reason, joined the society, looked about upon the little assembly, hoping that some one else might say what he himself felt constrained to utter upon

the subject before them. But no one moved; and at last he arose, and brought his solid and healthy form, and manly countenance, and rich, deep voice, with which he had been wont to inspire with their utmost strength his laboring animals, to bear upon what was to him a familiar and favorite topic. He spoke *substantially* as follows: —

MR. JOHN OSGOOD'S SPEECH.

(*Revised and written out by the Chairman.*)

Mr. Chairman, — I did not suppose, when I entered this room, that we should be called upon to express our opinions on any matter touching the welfare of the Agricultural Society just now formed, or upon any special object connected with that society. I came here to rest and chat, and look around, and become intimate with my associates. I never like to unite with any man in a common enterprise until I know him; and I never can know a man until we have both laid aside the restraint of business, and sat down in our moral and intellectual shirt-sleeves to see and be seen, to hear and be heard, just as we are. If there is a mean or a soft spot in a man, you may be sure it will come out when he has nothing special to do, and nothing special to say, and no reason to be on his guard. If you want to find out whether a horse is unsound, let him alone.

But we have gone beyond the pleasure and the observation of private intercourse, and have been led by

my new friend here into a public discussion. He has given us his opinion of the horse, — a novel opinion to me; although I think I can now see that he has expressed fears and dislikes and misunderstandings which have been felt and entertained by many whom I have known, and who were not honest enough to utter them. Be that as it may, I think a great deal better of a horse than Mr. Jones does; and I will give him and you the reasons. To my mind, then, Mr. Chairman, the relations which exist between man and the horse are of such an intimate and significant character, that they cannot be destroyed or violated without producing an effect deeper than that produced by the simple loss of property. Somehow the horse has managed to connect himself with so much that is interesting and valuable in life, that we cannot abuse or insult him without wounding our self-respect; we cannot destroy him without serious loss. He occupies a strange and important place in our history. In great military expeditions he has always performed an important part. Old warriors used him. Old scholars wrote about him. Although my friend finds more ecclesiastical authority for respecting the ox and the ass, I would remind him that Jacob commenced early trading corn for horses with the Egyptians, and that a long array of chariots and horses followed this patriarch in funeral-procession. He was an Egyptian animal at a time when Egyptian civilization outshone all others; and I am of opinion, with all due defer-

ence to those who differ from me, that he has found his most congenial companions where cultivation and refinement have prevailed, from the days of Pharaoh until now. As the arts of life advance, how he goes with them! I find him in Arabia, the ally and protector and companion of man, his best possession there. I find him immortalized in the finest marbles of ancient Greece and Rome. I find his name connected with great human exploits. I find pages in history dedicated to the record of his wonderful deeds on the turf and the road, at labor, in the chase, and on the field of battle. Kings have devoted the royal treasury to his increase, improvement, and comfort; and ambitious and enthusiastic agriculturists have applied themselves unsparingly to his introduction into the best regions and systems of farming. Why, what a flood of charming associations and memories rushes around us as we recall the position which the horse has held for almost all time! William the Conqueror and his Norman horses, King John and his Flemish stallions, the admiring crowds that gathered round the Darley and the Godolphin Arabian, the enthusiastic admirers of Sir Archy and Sir Charles, of Lexington and Boston, of old Eclipse, the studs of Washington, the thorough breds of Jefferson, — it is not worth while to tell me that there is nothing more in all this than the simple ownership of so many merchantable animals, to be valued by weight in the market. In great events of joy and sorrow, in crises and revolutions, the horse

somehow finds his place, standing next to man, the partner of his fortunes and his fate, and performing an important part in all the drama. I have been so struck with the place assigned the horse in all the stirring incidents of chivalrous personal history, that I remember always the touching lines, which, in the Introduction to the Betrothed, tell the vision which descended on the "Noble Maringer:"—

> "Thy tower another banner knew, thy steed another rein;
> And stoop them to another's will thy gallant vassal train;
> And she, the lady of thy love, so faithful once and fair,
> This night, without thy father's hall, she weds Marstettin's heir."

Towers, horse, vassals, and lady-love, all join to make this significant picture. Tell me what other animal could perform his part there. But not in deeds of war and chivalry alone has the horse endeared himself to man. I have said he seems to belong by right to the highest civilization, and to find there his most favoring and congenial home. Not, however, to this sphere alone is his genius confined. Obedient to surrounding circumstances as no other animal seems capable of being, his frame and temperament alike conform to the necessities which he meets. The pride of the race-course, to which he is led often when he is but two years old, prematurely developed by protection and care into all the nerve and vigor of mature life, restless, impatient, and beautiful, he finds an elephantine, stolid, patient brother leaving the pastures of Holland and the Clyde

for the weary toil of the brewery and the coal-yard; he finds a hardy, diminutive, busy, cool, and sagacious member of his family browsing on the moss and ferns of the Orkneys; he hails from the desert the lithe and sinewy form of a more immediate relative; he looks on with amazement as his self-poised American cousin whirls along the road with that tremendous stride which has been developed by the wants of a free and driving people, each one of whom is bound to reach his destination first; and he is amazed to find a rough and wiry specimen of his race scouring the plains in all the vigor of savage life. Preserving his horse characteristics under all circumstances, and in whatever form he may appear, he gradually adapts himself to soil and climate with a readiness unknown to any other animal but man. And more than this: on the battle-field he is a war-horse; on the race-course he is a deer; on the farm he is a drudge; on the road he is a locomotive; at the civic procession he is as airy as his rider; as a hack he is sagacious in the use of his forces; at the stage-coach he is "flying all abroad;" at the private carriage he is as proud and disdainful as the petted beauty who sits behind him; at the funeral he is as melancholy as the mourners.

Now, sir, do you wonder that I admire an animal whose status and genius I have just described as I understand them? I do not object to other animals: I respect them as I do the trees planted by my fathers, and the mill-ponds which they dammed "for the public

good." But I study my horse; and my horse studies me. If I am a coward, he is one; if I am lazy, he is lazy; if I am impatient, he is impetuous; if I am lost in thought, how dreamily he pursues his way! But a cat is a cat the world over, let the mistress be what she may. A dog is a dog, in season and out of season, whether he follows beggar or prince. A sheep is a sheep; and no circumstances can modify its sheepishness. A cow is a cow, no matter where the pasture, or who the milkmaid, — the same senseless, board-faced, "panicky" beast, the same indolent machine, the same placid lump of awkwardness, the same matter-of-fact agricultural fixture. Hence I have always imagined I could read in the conduct of the horse a certain measure of the character of the owner, as you can see the man in the empty hat which sits upon the table, you cannot tell why. When I was a boy, I used to estimate the condition of my neighbors by the looks and conduct of their horses. When I saw a venerable pair seated in a rickety wagon drawn by a low-headed, ewe-necked, ring-boned mare, by jerks along the road, I always pictured to myself the establishment from which that venerable pair came out. When I saw the village doctor jogging about with rusty harness, and dilapidated vehicle, and melancholy horse, I drew my own inference, and instituted a comparison at once between this man and his rival, who, without ostentation, kept his equipage in order, and drove well the horse which he had selected well. Upon

the box of a market-wagon, drawn by a well-matched, even-working pair of solid bays, I always found seated a contented and thriving farmer. The minister of my native town, a large-hearted, kindly, sympathizing pastor, and a sensible preacher of the gospel of Christ, always drove an elegant horse, and drove him well; so that in his two-wheeled chaise at least, or when mounted erect in the saddle, the people respected him, and did not forget their respect when he had dismounted. And never shall I forget the chagrin and dismay, and "dismal doubts," which filled my mind as I found myself and my beloved Jerusha, now my wife, seated in her father's ancient chaise, behind her father's ancient steed (both borrowed by me for the occasion), and subjected to the sly jibes of the smart young people who drove their smart equipages on that memorable drive to the seaside. I pitied Jerusha; and Jerusha pitied me. But, fortunately for us both, that horse was the only fault she or her family had. Excuse me, sir: but I cannot forget those days; and, when I am away from my wife and children, they will constantly be uppermost in my mind.

Now, sir, when I commenced farming, I made up my mind that my horses should be as good as my sheep and cattle; that none of them should be surpassed; and that I would find out a way to breed and rear my own, instead of going into the market to purchase the fruits of other people's industry. I knew very well what I wanted. I did not want a running-horse, nor

a saddle-horse, nor a cart-horse. I wanted a horse of all work, — a horse weighing a little more than ten hundred pounds, in good road condition; fifteen hands and one inch high (for I had found that this height and weight usually go together); with a head not too fine, wide between the eyes, and high above them; with a good-sized, steady, erect, and lively ear; with every bony process sharp and prominent, — even the processes of the first cervical vertebra behind the ears; with a calm and well-set eye, and lips which indicate determination rather than delicacy; a Websterian head, with a neck well muscled, well arched, strong, and elastic; with active motion, and a throttle loose and open; with withers not sharp and thin, but solid and strong; with a shoulder set loosely on, broad and deep at the base; with a strong arm, sinewy leg, short canon-bone, firm and not too long or elastic a pastern, and a firm foot; with a deep chest, without a prominent and bulging breast-bone; with a round barrel, ribbed well back towards the hips, but not so far back as to interfere with the action of the hind-quarters; with a short back, and a slight elevation of the rump just behind the coupling; with a long and strong quarter well muscled inside and outside; with a hind-leg so set on that the action shall be free and open, and with the fore-leg so set on that the toes shall not turn out for fear of brushing the knees at speed, and that they shall not turn in too much for fear of paddling. I wanted a good strong bay color with black points, and a tem-

perament calm, collected, fearless, defiant, and a brain quick to learn, and strong to remember. This was the horse I wanted; and I felt sure I could breed him.

This horse, and the way in which he is to be obtained, has been so well described elsewhere (and I think, Mr. Chairman, you will recognize the description), that I venture to quote the passage from memory; and I have read it so often, that I think my memory cannot fail to recall it: —

"The American trotting-horse" — and this means the American horse of all work — "is an animal after his own kind, and, I venture to say, unequalled by any other horse on the face of the earth in all that makes such an animal truly valuable in every kind of service. It takes true equine genius to make a trotting-horse. His mechanism must be as well balanced and symmetrical as a locomotive. Propelled as he is by one quarter at a time, his progress is the result of nerve and strength and decision, unknown and utterly ignored in that leaping, bounding motion, where one end follows the other, as is the case with the running-horse of the English turf. He must be solid in his foot, strong in his limb, firm in his back, free and easy in his stride, and, above all things, calm and collected amidst all the trials of the track and the road, which tend to throw him off his balance, and reduce him to the level of the hare and the fox and the greyhound, and the English race-horse, running helter-skelter in a natural manner, without the exercise of

any faculties except those with which Nature endows the coward when he flies from danger or conflict. The American trotter requires bones and muscles and brains; and, when he stands high on the list, he has them all. For compactness of form and ease of motion, for strength, endurance, and sagacity, he is unequalled.

"The beautiful description which Virgil gives of a good steed in his day is just as true in our own: —

> 'Choose with like care the courser's generous breed,
> And from his birth prepare the parent steed.
> His color mark: select the glossy bay;
> And to the white or dun prefer the gray.
> As yet a colt, he stalks with lofty pace,
> And balances his limbs with flexile grace;
> First leads the way, the threatening torrent braves,
> And dares the unknown arch that spans the waves.
> Light on his airy crest his slender head;
> His body short; his loins luxuriant spread;
> Muscle on muscle knots his brawny breast.
> No fear alarms him, nor vain shouts molest.
> O'er his right shoulder, floating full and fair,
> Sweeps his thick mane, and spreads its pomp of hair:
> Swift works his double spine; and earth around
> Rings to his solid hoof that wears the ground.'

Now, we have this animal as the natural product of our farms. I know not how it has come to pass, but it is a fact, that the farmer's horse in New England is peculiar to himself, and is, moreover, peculiarly an American institution. He may be descended from the thorough-bred, for any thing that can be said to the contrary; but, the farther he is removed from that

rather equivocal class of animals, the more truly does he become a trotter. I look upon him as one result of that social and civil equality, which, in our own country, makes one man's time as valuable as another's, and which authorizes the farmer's boy to take the road from the squire, or the parson, or the doctor, whenever his colt can do it. Every man in this country who can keep a horse wants a good one; and, when he has got him, he wants to avail himself of his horse's powers to make the distance between the mill or the meeting-house and his own home as short as possible. We all drive on the road; and this, combined, undoubtedly, with certain fortunate aptitudes of climate and soil, has given New England her valuable races of trotters.

"Why should we go abroad, then, with the expectation of improving what we now have? While we have our Messengers and Black Hawks, and other families of Morgans, so diverse in size and shape, so well fitted by form and temper to every labor, and yet possessing a kind of prevailing uniformity, expressed by the phrase 'a horse of all work,' can we hope to derive any benefit from a resort to those specific breeds of horses which in England are devoted each to its own specialty? There is no necessity, for instance, for importing a Suffolk Punch; for half a day's search would undoubtedly provide you with just such an animal raised on your own soil. We need not import hunters; for we have no need of any such horse among us. The Cleveland Bay, valuable as a carriage-

horse, could hardly expect to improve the stylish breeds found South and West, and distinguished more for style than any thing else. And when we consider that it is only after we have reached many removes from the thorough-bred that we have arrived at good trotters; when we remember that neither in shoulder, nor leg, nor quarter, nor general mechanism, is there any analogy between the thorough-bred as raised in England and the trotter as raised in our own country, — we may well ask ourselves, What advantage is to be derived from the introduction of such animals among us?

"It is because we have already what we want in the way of horses that I am opposed to the introduction of foreign breeds among them. Our customs and modes of life, together with, perhaps, a fortunate outset and certain natural advantages, have produced for us better horses than we can import. If this were the case with regard to our cattle, I should entertain the same opinion with regard to them; but it is not so. We have, partly by accident and partly by design, been engaged for years in developing a race of trotting-horses; but we have not developed races of cattle peculiarly adapted to the dairy or the shambles. That work is still before us; and we can only accomplish it by obtaining such animals, wherever they can be found, until we have established the breeds for ourselves."

Perhaps, Mr. Chairman, I might slightly qualify some of the opinions I have just quoted; but they are, in the main, correct. I recognize the value of those old

progenitors who brought into our country, many years ago, the bone and muscle and nerve and wind and capacity of the English thorough-bred of that day. I am mindful of the old Messenger, and of what he and his sons have done; and I cannot, moreover, forget that his fame as the ancestor of trotters was established, not in Bucks County, Pennsylvania, where he stood two seasons after his arrival in this country (in 1780), but on Long Island, and various other points in New-York State, whence his stock was distributed throughout the best breeding-sections of New England. As the sire of Miller's Damsel (the dam of American Eclipse) and of Sir Harry, out of mares of undoubted pedigree, he won a fine reputation; but it was as the sire of Mambrino — whose dam had no pedigree, except that she was "by Imp. Sour-krout," and of Hambletonian, whose dam was by Messenger himself, but whose grand-dam was "unknown" — that he won his distinction as the ancestor of some of the most remarkable trotters known on earth. And how, as generations went on, and that "unknown" blood worked in, did the speed of this family increase! From Mambrino sprang Abdallah, dam Amazonia (by Messenger, dam *unknown*), and Mambrino Paymaster, dam *unknown*. From Abdallah, with his *unknown* grandmother, we have, two or three generations removed, each with its *unknown* dam, Rysdyk's Hambletonian, with his famous sons Dexter, George Wilkes, and Mountain Boy. From Mambrino Paymaster, with his

unknown dam, we have Mambrino Chief, dam also *unknown*, though said to be of Messenger descent; and from Mambrino Chief we have Lady Thorn and Mambrino Pilot and Mambrino Patchen and Ericsson and Brignoli and Ashland, in whose pedigrees will be found as many *unknown* dams as there are sires and grandsires. And as I trace the blood of the old horse into Maine and Vermont, where all the mares were "unknown," what a tribe of our earliest and best trotters rises before my vision! — Ripton, the gallant "white-legged pony," the favorite of Hiram Woodruff, the resolute and plucky and triumphant, rivalling Dutchman as a three-miler, and defeating Lady Suffolk, an eastern horse, undoubtedly of Messenger and Morgan blood; and Daniel D. Tompkins, a wonderful little horse; and Gen. Taylor, "a very famous trotter and sticker;" and Independence, the delight of my boyhood; and Fanny Pullen, the dam of Trustee, the twenty-miler; and Shepherd Knapp; and Mac; and True John; and Green-Mountain Maid; and Gray Vermont; and Sontag; and Ethan Allen (dam, a Messenger mare), the best balanced horse ever seen on an American track, the evenest-gaited horse from the walk onward ever bred, and the most striking illustration of the enervating influence of high feed and rapid work in early life ever known in horse annals. These horses, far removed from the original thorough-bred, and fortunate in the strain of blood which they do possess, springing from families

in which an admixture of various races is undoubtedly to be found; members of a list honorable and illustrious, commencing with Topgallant and Whalebone and Dutchman and Confidence and Washington and Rattler and Lady Suffolk, with their "unknown" strains, and ending in our day with Flora Temple and Goldsmith's Maid and Dexter and American Girl and Lucy, and Bonner's Pocahontas (the Bates mare), the queen of mares, with their great records and their absolute defiance of time and space, — these horses, I say, illustrate what I mean by that power of the American trotter which is to be obtained by removal, step by step, from the form and gait of the thorough-bred.

But not everywhere does this removal accomplish the object which the breeder of horses in America has in view. Old Messenger did not leave behind him the same fruits in Pennsylvania that he did in New York. He met nowhere in that more southern region the blood which it was necessary to mingle with his own in order to produce the genuine American horse. Who can tell that his fame as the ancestor of a long line of trotters is not due as much to the fortunate locality in which his lot was cast as to his own intrinsic merit? Who can tell that Diomed, and his two famous sons Sir Henry and Duroc, would not have been rivals of Messenger, and his more famous sons Mambrino and Hambletonian, had the two families exchanged residences, and Messenger had gone down

into Kentucky among the thorough-breds of that State, while Duroc had cast his lot among the "unknown" mares of the North?

However this may be, sir, we have got the American horse all along the northern line, from Eastport to Detroit, ay, still farther west, — a fortunate combination of various bloods, invigorated by the sharp air of our northern hills, refreshed by our cold northern streams, fed into hard bone and vigorous muscle by our short and sweet northern pastures, and capable of carrying his sturdy forces, and implanting them, for a generation or two at least, among the heavier bones and softer muscles of more luxuriant valleys, milder skies, and warmer springs. That he gets somewhat of his power from his native soil and climate, there can be no doubt. But how has he converted that stilted gait of the thorough-bred into the swinging stride and powerful knee-action of the trotter? What has changed the narrow and confined shoulder of the thorough-bred — with its short humerus attached, and the necessarily advanced position of the fore-leg so near the point of the shoulder that a line falling thence touches the toe — to loose shoulder-blade and long humerus, — long from the elbow to the point of the shoulder, so that a line falling from this point touches the ground far in front of the foot, — and to that massive and muscular base which wins for the good trotter that common exclamation, "What a rousing shoulder!"? What has cut down those sharp, thin withers of the thorough-bred, and filled in the

space above the top of the shoulder-blades with such a mass of strong muscle? What has strengthened that lower jaw, so that the horse and his driver may be made one through the bit and rein? What has dropped the points of the hips below the level of the rump, where they stand usually in the thorough-bred? What has judiciously cooled the ardor, and increased the patience, and enlarged the sagacity, of the thorough-bred? What has incased the untiring channels of true blood in a new frame, of proportions hitherto unknown to them, until they were subjected to the influence of American companions, and American wants, and American institutions? Probably no single cause, but many combined. The habit of driving, to which I have alluded, has undoubtedly done much towards bringing about this result. But this alone is not sufficient. And I am constrained to believe that we owe much of the shape and stride which distinguish our best trotters to a larger or smaller infusion of Canadian blood, derived from the early importations of Norman horses into Canada, which have been improved in size and quality by the soil and climate of their new home. In very many of our good trotters this is manifest. All the descendants of Henry Clay (whose sire was Long-Island Black Hawk, and whose dam was "Surry, a mare of great speed from Canada"), especially the get of Cassius M. Clay (a son of Henry), have the thick jowl, and heavy ear, and round muscle, and thick sinews, and coarse-grained foot, of the family from which

their mother sprang. How the Morrills show it, even when brought down to Young Morrill, and, through him and that wonderful Steve French mare, to the pair of princes, *duo geminos fulmina belli*, Fearnaught and Fearnaught, jun.! How apparent it was in Hiram Drew! Sometimes there is enough of it to make them faint, and sometimes just enough to send them along. So Pilot, "a genuine Cannuck," came over into the States, and stirred up the thorough-blood to the extent of Pilot, jun., and his rousing son John Morgan, and rushing daughter, the dam of Mambrino Pilot. So, from a Canadian mare, Rysdyk's Hambletonian got Bruno, and the Brother of Bruno, and their full sister Brunette. So "a small pacing Cannuck" brought forth "Gift, a chestnut gelding by Mambrino Pilot," who, "at four years old, received five forfeits, and challenged, through 'The Spirit of the Times,' any colt of the same age to trot to harness or to wagon for a thousand dollars, without being accepted." So Old Morrill received and transmitted that tremendous stride, which his family will never lose until they are swamped by the daisy-cutters of Virginia or the English turf. So that wonderful little incarnation of equine genius, Justin Morgan, son of True Briton and the Great Unknown Mare, inspired and elevated the cold horse-blood of Vermont (undoubtedly largely filled with a French infusion at the time of his arrival there) up to the courage and endurance and style of Sherman and Green Mountain, and at last to the speed of Black Hawk, and Ethan Allen, and Lady

Sutton, and Gen. Knox, and Lancet, and Gen. Lyon, and Honest Allen, and Gilbreth Knox. And so the thousands of medium-sized, hardy, enduring horses in the service of the family, in the stage-coach, in livery, on the track, and on the road, go whirling on with their Norman stride and their thorough-bred wind and courage.

Hence, then, our American horse; and, taking him as he is, I have an idea that we can so direct his breeding as to preserve to ourselves all his best qualities, and even enlarge and improve them. I am aware that the breeding of horses is a difficult and doubtful business. The horse holds a position in the scale of being which makes him peculiarly sensitive, from his embryo life upward, to all surrounding influences. The fact that but a few generations are necessary to change almost his entire structure, in order to conform to a change of climate and soil, is sufficient evidence of the ease with which his race may be modified by the accidents about him, or by the designs of his master. Suffolk pigs, short-horned cattle, terrier pups, can be bred to order. Not so the horse. He is a bundle of forces moral and physical, either class of which may be distorted by influences almost beyond our control. A calm, courageous, docile, intelligent mare, bearing a colt sired by a stallion equally well balanced with herself, may be subjected to sudden fright; she may fall into bad hands, and be lashed to madness while pregnant; she may have her attention fixed on some ignoble compan-

ion; and the character of her offspring be so different from her own or that of its sire, that she is ashamed of it (or ought to be), and her owner despises it. Every man knows that some families of horses are easily broken to harness, in fact have a natural gift in that direction, and take kindly to the strap and the shaft; and that other families are rebellious and violent, and almost untamable. That this quality is inherited, there can be no doubt; and, if you do doubt it, take the English thorough-bred, with his inheritance of stormy passions and impetuosity on the turf, and his days of idleness in which his vices grow apace, and compare him, on all points of submission, docility, and usefulness, with the American horse of all work, the heir of every accomplishment which can make a horse useful at the plough or the cart, or on the track or road. Now, these qualities may easily be transmitted, and they may easily be destroyed. A rough master may upset all the virtues of generations, and unexpectedly find himself the owner of a colt inspired with all the wildness and savagery of its remote ancestors. It is a good deal to ask, I know; but, if a man means to raise up a good-tempered and civilized family of horses, he must be good-tempered and civilized himself.

And then the unexpected physical variations: who can account for them? You can generally be pretty sure of breeding a pig which will weigh a given number of pounds at a given age. You can generally breed a short-horned cow with certain specified lines, a de-

sired color, a wished-for aptitude to fatten, and any number of such inglorious qualities which make up a good beef-producer; but to breed that delicate organization which makes a good milch-cow, and that nice adjustment of nerves and veins, and bones and muscles, which makes a really valuable horse, is not so easy. Even thorough-breds vary to a degree entirely unaccountable. The size varies, the color varies, the form varies, the power varies, in a family bred even from one sire and one dam. The success which has attended the efforts of the best breeders is so small as to be truly discouraging. The great English horse Eclipse, bred as he was to hundreds of the best mares of his time, got only three hundred and forty-four winners; and half of these never got beyond a single race. Matchem, another great and victorious horse on the English turf, got but three hundred and fifty-four winners. And King Herod, the third king of the race-course and the stud, got only four hundred and ninety-seven winners, but few of which made any mark beyond their first effort. What will the most enthusiastic friend of any trotting-stallion known within the last thirty years tell us of the trotting-capacity of his stock? Old Black Hawk stood for mares almost from the day when, a four-year-old colt, he trotted down from Dover, N.H., and went star-gazing into William Brown's stable-yard at Haverhill, to be purchased by this veteran landlord and horseman, in connection with his friend Thurston of Lowell, to the hour when he died in the comfortable

stable of David Hill of Bridport, Vt., for whom he had earned a fortune; and yet you can count his trotting sons and daughters on your fingers. So, too, of Ethan Allen, and Gen. Knox, and the Drew Horse, and the Eaton Horse, and Old Witherell, and Lambert, and Rysdyk's Hambletonian, and Young Morrill, and Fearnaught, and a host of others, known and unknown; while some unheard-of stallion has sent his single offering to the track, "but that one a lion."

Why, sir, I said, in the beginning, that I thought I could breed about the horse I wanted in size, shape, and temperament. I think so still; and yet the experience I have had is somewhat discouraging, and will hardly sustain my theory. I purchased many years ago an Abdallah mare, of good speed and bottom, fifteen hands and two inches high, weighing about ten hundred and fifty pounds, and of bay color with black points. She was a good mare, and evidently well bred. She had speed; could trot in fifty almost any day in the week. I bred her five times to Trotting Childers, a son of Hill's Black Hawk, and out of Lady Forest, afterwards called Lady Maynard, — as speedy a mare as ever dashed down Boston Neck in the days when Hiram Woodruff used to send "the roan horse" whirling past every thing except the mare. My first colt was a shrewd, sagacious, but tempestuous little horse, fourteen hands and an inch high, with a rather light fore-leg, not a good foot, with the endurance of a locomotive, with the jauntiest gait in the world, as black

as a coal, as big again moving as when he stood still, and with speed enough to send him round a mile-track in road condition in 2.38. He was as good a little horse as I ever saw; and his name was Doncaster. My next colt was a mare, fifteen hands high, quiet and calm, and a little phlegmatic in her temperament; with a fine head; long and well-proportioned neck; well-balanced shoulders and quarters; with an easy, stealing gait; honest; reliable; somewhat timid; who could trot in about three minutes; not quite as large when moving as when standing still; in color black, with white hind-feet. She was a most amiable and lovely mare; and her name was Jemima. My next colt was a delicate, nervous, incapable, fine-drawn, light-limbed mare, about fourteen hands two inches high, in color black, and in all her attributes thin. She never got so far with me as to have a name. My next colt was a solid, lazy, inactive chunk of a bay horse, as unattractive as possible; slow; would not go without whipping, and, if you whipped him, would make for the nearest stone wall; had neither vigor nor speed, but possessed the same power of endurance as distinguishes an ox. He lives on a farm somewhere now; and I am sure he enjoys its repose. He never had any name, so far as I know. My fifth and last colt was a horse; and such a horse! Why, Jim! — I own him now, an airy-gaited, elastic, vigorous bay, fifteen hands high; weighs ten hundred and forty pounds; with a head full of delicacy and strength; with fire and prudence combined; with a

tail like a waterfall; with a foot like a sledge, and a leg like a bundle of wires; with a shoulder and quarter just fitted to the most perfect back and barrel ever seen; as mild as the moonbeams when Jerusha drives him, and as stormy as the "vexed Boöthes" when I take him in hand, and call on him; capable of seventy-five miles in a day in single harness without weariness to himself or his driver, and able to wear out any horse I ever hitched him with in double harness; a discriminating horse, who knows me above everybody else, knows what I like and what I want, does it, and can trot any day in 2.40. His name, sir, is Jim, as I told you; and a rare horse he is. Now, that is one family,— three good ones, and two poor ones, no two in any respect alike (except in color), either in speed, or shape, or temperament, or size, or appearance. Neither physically nor morally did they resemble each other.

I have had another family, sir, quite as remarkable as this. Many years ago I purchased a large white Messenger mare, raised in the State of Maine, — a mare of great courage, strength, and speed. She stood fifteen hands three inches high, and weighed, when in good condition, nearly eleven hundred. She was a great mare every way. She had had two colts by Ethan Allen when I bought her, — one a clumsy, heavy-gaited, dull brute, sixteen hands high, with a big head, a bad fore-leg, a curby hind-leg adorned with bog spavins; the other a bay colt, analogous to his brother in every respect, except that his curbs were smaller,

and his spavins larger. This mare I bred to Doncaster, the horse of my own breeding previously alluded to. The result was a gray mare, fourteen and a half hands high, a perfect bundle of well-balanced bone and muscle. Her intelligence is marvellous. She knows by sudden instinct what to do; and, by as sudden an instinct, she does it. Her strength is like that of the little horse Justin Morgan. Her stride is equal to that of a sixteen-hand horse, and as even as machinery; while her step is as firm and rapid as a steam-driven hammer. I have driven many horses in my day, but not one equal to this mare, from her first movement, walking away from the stable, to her bursts of speed on the road, which are tremendous. She endears herself to everybody who rides behind her. Women grow cheerful under her influence; young men are lost in admiration; and many an old man, after feeling her invigorating power, has sent me word back from his retirement, that he must have that mare if I should ever part with her. She is not fine drawn in any respect; has not high, sharp withers, nor thin lips, nor small ears, nor a slim neck: but she has a luxuriance of every thing that can give power to a brilliant little mare, who knows that her life means cheerful business, and not dismal and idle play. Her name is "The White Mare;" and you may be sure she will never disgrace it.

This mare I bred five seasons to a young stallion, also sired by Doncaster out of a long, low, strong, rapid

eastern mare; and a good young stallion he was, named Blue Jacket. I felt very confident that I should, at any rate, secure uniformity from so close a connection as this; and I also felt confident that I should get a great many valuable qualities from a sire and dam so well bred and so full of merit themselves. The first colt, now known as Sorrel Jim, is as good a little horse as one could desire, about fourteen hands high, of light sorrel color, with lighter mane and tail; with a loose, open, strong gait; great intelligence and courage; and speed enough to beat almost every thing he meets on the road, even when handled by my young daughter, who now owns and drives him. He is a most attractive little horse. The next colt was a gray mare, not at all prepossessing, and by no means worthy of her distinguished ancestry. The next colt was a gray horse of about the same description; and I began to despair. The next was a bay horse; and a good bay horse he is. I have no fear of him. His head and neck and shoulder and back and quarter and leg will carry him very far up the steep which leads to the temple of fame, or I am very much mistaken. He is not as brilliant as his dam; but he has immense strength, a great, even gait, an abundance of calm determination, steady courage, and a personal pride which will not be trifled with. The last colt, and the fifth which the mare has had by Blue Jacket, is a mouse-colored filly, too young to tell even the first chapter of her story.

Here I had a dam and sire closely related, bearing in

their veins the blood of the Messenger, the Abdallah, the Black Hawk, Lady Forest, and the best of the Great Unknown; but what a diverse family I had from them! And yet this is horse-breeding, whenever you leave the commonplace work of breeding slow and phlegmatic cart-horses, and advance into those regions where the highest attributes of the horse must be reproduced in order to secure that animal which can distinguish himself on the track or road. And this seems to be Nature's law. The production of all the lower order of animals, or of all the lower grades of any race, however high it may be, is not easily driven out of the channels laid down for it by the generally-recognized rule. A pound of beef or a pound of pork can be as easily produced as can a bushel of wheat or corn. Not so, however, the finer qualities to which the flesh is obedient, and which will triumph in spite of physical defect or deformity or weakness; as the "gallant Gray" laid down his life in the "Trosachs' rugged jaws;" and as "the evergreen, live-oak, old Top-gallant, in his twenty-fourth year," and "spavined in both legs," rushed in and won three-mile races against the best horses of his day, and laughed at his ten-year-old companions, who, with their feeble spirits, were "staggering about, over-kneed, and twisted up, and knuckled behind," and were waiting only for the end of an ignoble career. Not only is it almost impossible to transmit this ethereal spirit, in its precise quality and quantity, from generation to generation, but it is

equally impossible, while striving for this excellence, to preserve that physical uniformity which belongs to the more material and the grosser organizations. So Rosa Bonheur can paint a drove of Norman horses, and Herring a litter of pigs in a farm-yard, all of each group bearing an exact resemblance to each other, and none rising above the low level of masses of organized matter. But not so with the English thorough-bred, nor with the American trotter. They are not to be found in droves, or uniform groups, or litters. Upon their conformations, a thousand influences, partly moral and partly physical, operate; and they will not obey the law of physical uniformity so long as they strive for individual excellence. I might carry this thought into a higher sphere, sir; but I leave it for every thoughtful observer, who contemplates the variety of characters by which he is surrounded in his daily walk, to do this for himself. I confine my discussion to horses.

If, while we are striving to breed horses of a high quality and great merit, we cannot get uniformity, you may ask, sir, "What can we get? and what becomes of your early statement, that you felt sure you could breed the horse you wanted, according to a standard laid down by yourself?" To this I answer, that I do not expect to succeed in every case, and that I am willing to bear my share of failures while striving for a reasonable amount of success. In the account I have given of two families of my horses, out of the many which I have bred, you will find that five out of the

ten have been remarkable. Either one of this five, different as they were from each other, would satisfy any man who wanted a horse to fill the place to which the selected one was adapted. While they were not all alike, they were all good, and reached the mark aimed at; some rising far above it. Apply this experience to a community engaged in breeding horses; assure that community, that, with careful and ambitious breeding, they can be sure of having valuable horses in one half the cases around them, and that the other half will be at least remunerative, and you offer all the inducement that reasonable men ought to ask in any business in life. This point, then, I have reached; and, while I am not willing to state the prices I have received for the good horses I have bred and sold, I can only say, that had I lost the five poor ones, and received nothing for them, the receipts from such of my good ones as I have sold are sufficient to place my horses alongside of my best cattle and sheep on the score of profit alone. They have paid me well: and they ought; for, in order to produce them, I have been obliged to learn wisdom from many failures of my own and my neighbors, to incur the expense of breeding from gift mares (the most expensive of all mares) against my judgment, and to devote my mind to the business in a way, which, in any sphere in life, is entitled to success. Let no farmer doubt, then, that he can breed a good horse, and do it profitably, if he will exercise judgment and skill, — not a bay horse always,

nor a black one, nor a chestnut one, nor a gray one, nor "one of a pair," but a good one. And above all, when he has got his colt, let him learn to estimate him at his true value, neither clothing the unfortunate animal with merits which he really does not possess, nor disposing of him to some keen-eyed buyer, who, by discovering his powers, and realizing his promise, may reap the reward.

I have read a good many books and essays, Mr. Chairman, on the subject of breeding. Some of them I found to be very useful, and some of them very useless; and many of them discuss so profoundly questions already settled, that I am always reminded of Dr. Holmes's Katydid, who said

"Such undisputed things in such a solemn way."

But from my own flocks and herds I have learned a few rules, which, if always applied, will, I think, be advantageous to our agricultural friends: at least, they have been to me.

In selecting a horse or a mare from several of equal merit for breeding-purposes from two or more families also of equal merit, I choose that family which has the best ancestry.

Never hope to get, from a sire which you do not like and a dam which you do not like, offspring which you do like.

Do not try to breed out an unsoundness: you may not live long enough to do it. But you can sell in an instant, — "in the twinkling of an eye."

Breed in-and-in as much as you like, if you have exactly what you want on both sides. I never knew a good family of cattle, or a good flock of sheep, to be reached in any other way. If you want a good family of animals of any description around you, begin right, and then stay at home. It does no good to wander all over creation, introducing experiments into your stables, and confusion with the experiments. But remember, that if you expect to reap the advantages of close breeding, and hope to perpetuate the good qualities which you already possess, you must feed well, and take good care. Starvation and improvement do not go together. This rule holds good with regard to cattle and sheep; and that it holds good, also, with regard to horses, those familiar with the families of Selim and Touchstone and Defence and Rubens will readily acknowledge. For myself, I turn to my White Mare and Blue Jacket, with their colts Sorrel Jim and Billy, as an encouragement to the breeders of trotters. How I should like to see a colt from Bonner's Pocahontas and Daniel Lambert!

Never breed from an immature horse. Weakness and unsoundness are pretty sure to follow. The value of a horse consists in the perfection of all his faculties and organs, — his bones, muscles, sinews, brains. He cannot transmit these with any certainty until he has them himself. Young horses are always doubtful sires. Old horses, if good themselves, have seldom any reason to be ashamed of their offspring. Ethan Allen ruined

his reputation as a stock-getter by starting too young; and so ruined it, that even the success of his later years has hardly redeemed it. Waxy and Melbourne and Ion and Sir Hercules in England, and Black Hawk and Messenger and Abdallah in America, sired many of their best colts when they were twenty or more years old. I bred a good two-year-old stallion once to six good mares, and got six good-for-nothing colts. The same stallion did fine service at ten.

I would not breed from kickers or biters, or sullen horses, or half-broken horses or mares, or from horses and mares which have not been accustomed for generations to the work of civilized, useful, and practical life. I would have the acquired faculties, which are as sure to be transmitted as the natural ones, as good and reliable as may be.

If you will out-cross in breeding, be careful not to bring animals together which are violently and diametrically different from each other. The attempts to cross the Arab upon American mares of Morgan and Messenger blood, and the modern English thorough-bred upon similar mares, have usually ended in wretched failures. And not in this country alone is this true: for when I asked a distinguished American artist, long resident in Rome, why the thorough-bred of England had not been introduced into Tuscany and other parts of Italy to improve the breeds of horses there, he replied, "It has been done; but the result was a crop of weedy, leggy brutes of no value what-

ever." We have had some notable instances of this near home.

We are always told that we should not breed a large stallion upon small mares. I do not think this is a universal law. I have seen many large stallions, whose stock, even in a country abounding in small mares, was excellent; but these were horses whose muscular structure preponderated largely over their bony, — large horses with quick and nimble action. Horses whose bony development is greater than their muscular, horses with thin muscles and great bones, would not be likely to improve the stock of a region, especially if the mares were small. A thoroughly good horse with a good ancestry, whether large or small, would present great temptations to me. I should be willing to let him prove himself.

If either side is to be slow, let it be the mare. It is by the male that a race is to be improved. And always expect to get more good females than males; for this is the very general result in breeding all animals.

When a colt is born into a family, especially if his lot is cast in pleasant places and he has a goodly heritage, the foremost danger is that he will be spoiled in early life. It really seems as if almost all owners of horses endeavored to ascertain how, in the most expeditious manner, to ruin them. The natural tendency of a horse, young or old, is to preserve himself in a sound and healthy condition. The wear and tear of a life of

hard work, and the injurious effects of a life of luxury and ease, are about equally destructive to him; and the price he is obliged to pay for his intimacy with man, and the care and attention he receives at his hands, is the loss, in a large or a small degree, of the robust health and elastic animal spirits, and the abounding and joyous and painless power of motion, with which Nature endows him. A colt is a happy thing in the beginning, — happier than a child: a horse is intended to be a happy thing through life, — happier than a man. But the folly and misfortune which sadden and weaken the master bear heavily also upon his dumb and patient servant. The two travel a hard road together, and both are obliged to pay the penalty which should in justice fall upon one. If this is one of the inevitable consequences of the decree which gives man dominion over the birds of the air and the beasts of the field, I suppose man and animal must silently and patiently submit and obey. But it may not be so. If, for the gratification of ambition or pride, or for high service to his race, or for immortal renown, man is willing to subordinate and sacrifice all his physical powers, and is determined that his body shall obey the commands of his imperious spirit, inspired and consumed in the great flame, so must it be; but let him spare his servant who obeys him, — his dumb beast who has trusted in him.

It is a good thing, sir, to remember that a horse has certain natural faculties, without which he would not

be a horse, and which it is important to preserve. Man is so wise, as well as tyrannical, that he finds it difficult to believe that he is not to remodel and reconstruct every thing which is provided for his use and comfort before it is fit for his imperial service; and so he meddles with every body and every thing. It is much easier for him to comprehend his own handiwork than the Lord's. His boy stands before him, a bright, strong, attractive lad, full of capacity and promise; a combination of faculties good and bad, each striving for the ascendency; a fresh and glowing creation from the hand of God, intended to rejoice his father, and bless mankind. It is only necessary for that father to know where to encourage him, where to suppress him, and where to let him alone; to distinguish between his healthy powers, which a superabundance of youth and strength may sometimes make offensive, and those unhealthy deformities, which, even while quiet and slumbering, are disgusting and discouraging. But this is no easy task. Where there should be peace and mutual confidence, a contest begins: and, before it ends, the boy has lost his self-respect, his love, his confidence in his fellowmen; his virtues are discouraged; his vices rage. Or it may be, that, in rooting up the tares, the wheat has been pulled up along with them; or his good points may have been distorted into subserviency and inefficiency, while his bad ones may have learned how to play the hypocrite, and rule. Where, too, there should be a manly and dignified intercourse, there is too often an effemi-

nate and enervating intimacy. The boy may be softened into abject reliance upon those who should inspire and encourage his most manly self-reliance. That apron-string business — how many a brave fellow has it sent mewling through life like a milksop! His father has made a good boy of him, but not the boy he was intended to be. The problem has been solved, but not in the right way. And, in the trials which follow, he wonders where those qualities are which he felt moving within him in his youth; and the father wonders why he is so little satisfied with the work of his own hands. No, sir: do not bother the boys. Do not meddle with them too much. Make them way-wise early. Don't pat them into weakness, or check them into madness. And, when they go forth in life, let them have manliness enough to meet their fellow-men in a manly way, generosity enough to warm a generous feeling in the breasts of their associates, charity enough to forgive the faults of their fellow-men, and humanity enough to know that it is better and more useful to encourage the virtues than to expose the vices of society, and more honorable to set a good example than to pronounce a good precept.

But, sir, to the colts. They, like the boys, may be spoiled by meddling with them. Not that I would leave them to run wild, — a rough and shaggy and half-savage drove. But I would not so thoroughly domesticate them as to obliterate every trace of that headlong and impulsive temperament which makes a colt a colt. I

have seen many a colt, especially when he was the "one ewe lamb," so petted, that he was more like a house-dog than any thing else. He had become so much the intimate companion of the family, that, as he grew up, he forgot to be in any way the servant. An appeal to his progressive faculties, which are the dominant faculties of a horse, was received with a sort of blank astonishment, instead of as a signal for more vigorous exertion. He had lost all that courage and independence which Virgil saw and admired when he spoke of his "leading the way," and "braving the torrent," and daring "the unknown arch that spans the waves." You may suppose that a good gait and strong powers of endurance are not to be destroyed in any such way as this; but I assure you, that, while they may possibly remain, the knowledge how to use them may be lost. Every experienced man knows that a horse will be one thing in the hands of one driver, and another thing in the hands of another. Hiram Woodruff could give new strength to the Roan the instant he took the reins; and Dexter and Ripton were inspired with new energy by his touch. My trusty and unyielding favorite, Jim, is a handful when I am behind him; a quiet lounger when Michael has him in hand. Now, what shall we say to all this? Why, that a horse knows what he is doing, and whom he is dealing with; and that, having learned his lesson, it becomes as much a part of him as his second nature. If, therefore, you want a horse, let the colt retain, in his full vigor, the fire that warms his blood. You must not

humanize him entirely. Meet him half way. Let him understand that there is as much horse in you as you expect there will be man in him. Let your intercourse with him be calm and good-natured, but prompt, energetic, decided, with a sort of careless firmness, colored with tenderness and youthful activity.

A colt should neither be petted to death, nor conquered and subdued to death. He should be familiarized with the harness when so young, that he may imagine the straps to be a part of himself. He should never know what it is to be "broken." He should find himself engaged in business, he hardly knows how; and he should be gradually introduced to his work with an unruffled temper, and an acquiescent but unsubdued spirit. When you conquer a young horse, you can never tell where the conquest is going to end. I remember well the effect of a pulley-rein ingeniously rigged by means of the water-hook, and a ring-bit, and a lengthened line, upon a wiry and spirited colt which I got many years ago in the State of Maine. He suddenly took it into his head to pull; and, as usual with inexperts, I pulled in turn. He was stronger than I, and could last longer; and so he could out-pull me in a ten-mile drive. I fixed my pulley upon him. Every half-inch which I secured, I could retain. It was an uneven fight for him. Two or three trials discouraged him. He gave up pulling, and was never a horse thereafter. He would not, under any circumstances, take the bit; but he would, under all circumstances,

take the whip without emotion, and with an indifference a thousand times more annoying than all his impetuosity had ever been. I do not have pullers now. I break my colts at two years old, gently, easily, good-naturedly; amuse myself with their coltish ways; never use a harsh bit, no bar-bit, no bit with keys and toggles, but a large, well-covered snaffle, which will not chafe the corners of the mouth as a bar does, and which is kept steady with an easy bearing-rein. A bitting apparatus I despise, as I do a colt which has fussed and fretted and champed and fumed until he has fussed and fretted himself over on to one rein. When a colt has well learned his lesson at two years old, he gets no more education from me until he is four or five. I never knew one to forget what he had learned, and have never yet had occasion to re-break one who had been allowed his two or three years of idleness, liberty, and growth. I think in this way you avoid all violence in training; you do not interfere with the colt's spirits; you do not expose him to wrenches and strains; and you give him a chance to harden his muscles by free exercise in the open air, just at the time when his bones are becoming well knit, and his nervous power strong and enduring.

As a colt may be spoiled by over-handling, so may he be ruined by over-feeding. Dr. Buckingham of Boston, in his admirable address read before the Massachusetts Medical Society at its last annual meeting, after speaking of the reckless manner in which the

lives of young children are trifled with by the use of "artificial food," when they should be confined, as nearly as possible, to the nourishment which Nature provides for them, says, "There the baby of the lower animal has the advantage. He is fed on natural food only, from the beginning, because his father and mother don't know enough to kill him. Man, the reasoning being, is defeated by the animals, who possess instinct only. They never, for amusement nor curiosity, experiment upon the stomachs and lives of their children, with the desire of seeing how much indigestion they will bear with impunity. I am not alone in the belief that the excessive mortality at an early period of infancy is, very much of it, caused by attempts to substitute for natural nourishment that which will save time and trouble to the mother, and by attempts to force growth." With Dr. Buckingham's views of the proper food for the young of all animals we must all agree; but, if he were as familiar with the "attempts to force growth" in our stables as he is in our nurseries, I am afraid he would hesitate before drawing an unqualified illustration from the former for the benefit of the latter. I agree that the father and mother of the colt "don't know enough to kill him;" but the owner does, oftentimes, know just enough. And the same destruction which the physician witnesses with distress and shame in his practice, the farmer may, with equal distress and shame, see in his stables; in a less fatal form, it is true, but in a form none the less

disastrous. You cannot easily kill a colt by injudicious feeding, I know; but you can inflict injuries upon him that are worse than death, and give him a prolonged life of weakness and suffering and uselessness. A dyspeptic man in the counting-room, or the pulpit, or the court-room, — made a dyspeptic by the injudicious food of his childhood, or by his own mature thoughtlessness, — is an object of deep compassion, it is true; but how much more compassion should we feel for the animal, who, without human aspiration and ambition to bear him above the pains of his existence, has been fed into a weakened stomach, and an exaggerated carcass, and nerveless limbs, and tender feet, and unsound joints, and cribbing, and torpor, and premature death! And this we see continually among the favorite colts. Give me the boys whose health and strength are derived from natural food in infancy, and simple food in youth. Give me the colts whose dams have been generous, and whose owners have been judicious. If I have a colt born late in the season, say in August or September (which I much prefer to spring and early summer), I have no trouble about the first winter. A box-stall, and good food for the mare, who is to nurse her colt until the following spring approaches, will take me over that first trying season, and will prepare the colt well for weaning and his first summer's run at grass. But if my colt is to be weaned, as usual, when he comes to the barn in autumn, I must then exercise skill and judgment in transferring him from his infant life to

the days of his childhood. A little milk from the cow once a day for a few days, and a pint, or thereabouts, of oats and shorts, with rowen or fine hay, a mixture of red-top and herds-grass, will carry him over the trials of being separated from his dam. But all this must cease as soon as possible; and that diet of good hay and roots, which is to serve him until put upon the road, must be commenced. I have known many a colt ruined by heavy feed this first winter. It is pleasant to see his glossy coat and lively head and mature neck, and well-developed form under a good supply of oats, "with just a little cracked corn." But all this pleasure will vanish if you look carefully at those knees, which tremble a little after exercise; and it will still more entirely vanish if you will examine him after his summer's run at grass, and wonder why he looks no better, and has not grown more. "It has been a bad season for colts," you say. But no: the season has been good enough for those young things which wintered well in a box and a barn-yard, had simple food, were kept healthy and thriving, and went out in the spring a little ragged, it is true, and not over-fat, but as hardy as cold air and good appetites could make them. The season has been good enough for these. I have said, good hay and roots: and by roots I do not mean carrots, — the most unsatisfactory root that horse, young or old, can eat, producing an unhealthy state of the skin and kidneys, overloading the cellular tissues with fat, and making a horse as washy as a lather-brush; but I mean Swedish turnips,

rutabagas, — the king of roots for all young animals which are making bone and muscle, and for all old ones which are being stalled. I have long since abandoned carrots. Having become dissatisfied with them, either for my colts or my driving-horses, I looked about for a substitute; and learning, from a report on Farming in Ireland, that in the early spring, when the farmers there began to plough, they also began to feed Swedes to their horses which were to draw the plough, I took the hint. I do not ask others to follow my example; but I am under everlasting obligations to the Irishman for his, and to the observer who recorded it. I have many colts that have never eaten a mouthful of grain until four years old, and many a horse who has wintered on hay and turnips, and always wintered well. I know nothing which will restore a colt in early winter, if he comes to the barn out of condition, and begins to droop and stock as soon as he is confined to the stable, so readily and effectually as Swedes. I can drive my old horses in winter, when fed on them, an occasional drive, as well as I can when fed on corn. I can preserve their legs in good condition, and their health in a sound state, year after year, on this food. And I am sure, that, while I can bring a colt to a working-age with hay and turnips better than with any thing else, I can also secure to myself a good, hard, lively winter horse, and to the horse himself a longer and more useful and comfortable life. Turnips are economically raised: they make bone and muscle; they keep the digestive organs

in good condition; they impart vigor to the nervous system. If you are told that your colt or your horse will not eat them, let me tell you that an animal that will learn any thing will soon learn to like them. Hay and turnips and good pasturage for colts; hay and turnips for the winter-food of resting-horses. And if you do not believe that heavy feed during the first winter will injure a colt, ay, during the first three winters of his life, go and buy one that has been thus fed; and in this way pay for your knowledge, as I have paid for mine. Breed a good colt, and have him fade out on your hands about the fourth winter, if not the first summer, on account of your stuffing process, as I have myself done. Go and ask Ethan Allen, and hundreds of his descendants who went through this enervating process; go and ask the fat and favorite colts who are passing their hot-bed lives in the good-looking stables which are multiplying everywhere; go and ask the thousands of English thorough-breds who are hobbling about, ruined by forced growth, and forced efforts, and hot food, ere their lives had fairly begun; and see what an answer you will get. They will all tell you, that all the muscle the horse makes after he is four years old is worth vastly more than what he makes before that time; that all the fat a colt loads upon himself before he is four years old, and perhaps five, is an injury to him; that the life is shortened, and the powers weakened, by early feed and early work; that the breeder of a good horse must be patient; that if you will feed for early maturity, and

drive for early speed, you must expect to lose a large part of the ultimate value of your horse, — a few years of life, a few seconds of speed on the track. Precocity is a poor thing: that alone endures which ripens slowly. The wisdom of human maturity is the best wisdom, — that maturity which comes from the steady and legitimate development of all human powers. That speed and endurance are the greatest which are not called for until the horse is in full possession of all his faculties. An American man, dependent on himself for all he is and is to be, fit for all the duties which may devolve upon him, will not grow up in a day. An American horse of all work, destined to toil like a locomotive, and expected to travel like one, wants time to develop himself for his tremendous service. It takes a great while to make a man, a trotting-horse, and an Ayrshire cow. Spruce-wood, Short-horn beef, Western, corn-fed horse-flesh, all grow apace; but they do not stand high in the scale, and they do not endure unto the end.

But, sir, the folly of bad feeding is no greater than the folly of bad stabling. The practice of providing warm and tightly-built stables for young colts is as injurious to them as forcing their growth by heavy feed. A colt requires fresh air; and, if he is furnished with an opportunity, he will be sure to get it. His lungs are the largest part of his internal organs; and he will provide for them, if there is any way to do it. Give him the best and warmest box in the world, and he will

leave it for the invigorating influences of the northern blasts in winter, and for the cooling and indurating effects of a coating of snow and hail. He seems to understand by instinct, that if he confines himself to the hot air of an elaborate, well-finished, model stable, his energies will wilt and fade. He seems to know that a glossy, shining coat is to him a sort of white wall of a whited sepulchre, — pleasing without, but within full of all equine disabilities; and so he only asks for room to stretch his growing limbs, and a roof sufficient to shield him from the storm, undisturbed if he should see a star through the crevice above him, and feel the fresh breeze whistling through a crack by his side. He wants a well-ventilated stable, and a chance to get out of it whenever he has a desire to do so. And, above all things, let him stand on the ground, if possible, while in his box; and, at any rate, in a yard into which his box opens. A floor, especially a wooden floor, is bad enough for a mature working-horse; but to a colt it is almost destruction. I have no shadow of doubt that we ruin thousands of horses' feet in this country by our plank-floors. The wood, when dry, is a non-conductor of heat, and tends to keep the hoof above its natural temperature, and to remove from it all its natural moisture; and, when wet, it has a tendency to rise above the surrounding temperature by fermentation. Wet or dry, therefore, wood, whether in the form of a plank-floor or of sawdust-bedding, is very injurious to the horse's foot. And so thoroughly convinced of this am I, that I always pro-

vide brick floors for all that portion of the stall which is occupied by the horse's fore-feet, — a practice which has, with the aid of tar-ointment, protected me, for more than twenty years of hard driving on hard roads, from sore-toed horses, and has sent out of my stables a foot which every farrier in town recognizes the instant he puts his buttrice into it. For the feet, then, of the colt and the idle horse, furnish the earth as a standing-place: for the feet of the working-horse, furnish a brick or stone floor. By such a floor alone can you secure to your colt a good foot; and in this way alone, moreover, can you be sure of giving him a good leg, a well-shaped ankle, and a firm and substantial knee. I know not how it is; but the misshapen ankles and shaky knees which come out of hot stables with wooden floors among the colts which have wintered there constitute one of the peculiar phenomena of the business of rearing these animals. But so it is; and I urge upon you all, whether you like horses or not, whether you fear or trust them, to give them the solid ground to stand on, whenever it is practicable, in their youth, and any thing but wood in their days of maturity and toil.

So important do I consider this matter of floors, that I pass by all the feeding arrangements of the stall, whether for hay or grain, as of secondary consideration. I think it is a poor plan, however, to compel a colt to put his head through a hole in order to get at his food, or to thrust it under a low beam, or to drag his hay

through a narrow rack. A feed-box, so constructed as not to furnish an opportunity for cribbing and biting, elevated not much above the stall-floor, and easily cleaned, is the best contrivance I have seen.

I take it for granted that no man will compel his colt to stand on a manure-heap, unless he wishes to injure his feet; and that the stall will be kept as clean as time and circumstances will allow.

But you will say to me, — those of you who are especially anxious to place the horse in as unfavorable a light as possible, and to cool the enthusiasm of his friends, — that, in spite of all your care and attention, the animal will be sick and unsound. I know it. But let me tell you that he need not be sick half as much as he is, nor unsound half as often, if proper measures are taken to preserve his health, and to prevent and cure his unsoundness.

With regard to his health, it is easier to preserve it than it is to restore it. The natural condition of the horse is one of robust health, of good digestion, of strong respiratory organs, of calm and even circulation. He has no especial tendency to those diseases which torment the human race, and lurk in our swamps and cellars and water-springs, and crowded habitations, and thronged cities. A few epidemics peculiar to himself, and one or two inflammatory disorders, constitute the great bulk of his ailments. And yet the loss of horses by disease is enormous. What the precise character of the disease is, its symptoms, its local complications, its pre-

monitions, the exact time and extent of convalescence, it is difficult to ascertain; for the horse has no story to tell. He is dumb under suffering, and can point out to no man the locality of his distress. How keen his agony is, no one can understand; for he bears with apparent insensibility crushing accidents which would paralyze his master, or leave him writhing in unspeakable agony. The effect, also, of remedial agents upon the horse, is a matter extremely difficult to investigate. We apply them: the relief comes; and we are too glad to trace it to our own efforts. But the veil is still drawn, and the mystery is as impenetrable as ever. I do not for a moment mean to doubt that soap and aloes, singly or combined, that opium, and saltpetre, and rosin, and ginger, and yellow-bark, and carbonate of ammonia, and sal-prunella, and oil of juniper, and camphor, and mustard, and oil of turpentine, and calomel, and digitalis, and belladonna, and colombo, and cassia, and rhubarb, will cure anasarca, and fevers of various kinds, and perhaps check glanders and farcy; because I am told so every day by those whose business it is to administer all these powerful medicinal agents. But I do know, that, in the human subject, such a pharmacopœia has lost its ancient charm; and an intelligent assistance of Nature is now considered as important as the heroic treatment adopted by our ancestors. And I think I know one thing more; and that is, that oftentimes the difficulties created by medicine itself are as hard to overcome as the disease it is proposed to re-

move by their use. I heard my family physician say once, when my son John was lying ill of typhoid-fever, "Watch him, and keep him comfortable. The chances are that Nature will work herself out of the trouble with but little aid of ours: if so, the convalescence will be rapid and steady. But if we must help Nature, why, we must; but we shall have to cure the disease we create in that event, as well as the one we now have." Some medical man once told me that medicines generally substitute one disease for another; and, as Nature cannot well do two things at the same time, we may turn her attention from what is unmanageable to what is easily controlled. I think there is something in this; for I can readily understand that the condition of body produced by mercury, and iodide of potassium, and opium, and digitalis, and quinine, is as much a disease as rheumatism and colic, and palpitation of the heart, and fever and ague. This a man can undoubtedly bear, if he can only move about his business or his pleasure. But a horse cannot. He must be "pretty well," or his machine will not work. He is, moreover, very easily affected by medicine. His system feels it much more readily than does that of man; and he cannot throw off its effects as rapidly as man can. I gave a horse some small doses of antimony, many years ago, to give him a glossy coat; and he was nearly a year recovering from the evidently prostrating influence of the drug. So I am of the opinion that we should avoid dosing our horses as much as possible. I should recommend early attention to the

first appearance of illness, with care, warmth, shelter, starvation, and cold water. I have never lost a horse in my stable from disease. No sooner does a horse show signs of sickness there than his work is stopped, his food reduced, he has repose, and a wet sheet if necessary. But among my working farm-horses I have had several fatal cases of disease, which were neglected or unobserved until past cure. Do not try to work a sick horse: believe that he is really sick in season. Do not try to persuade yourself that he will get along; but nurse him promptly and well in a well-ventilated stable.

But as I have said, sir, you can prevent disease more easily than you can cure it. There is no doubt that the annual loss of horses by death is more a cause of the hazards and risks of the horse-business than the uncertainties and fluctuations of the market. Even a fortunate hit, made by discovering an unexpectedly valuable horse in a large number purchased, will not compensate for the money sunk in this way. A very large proportion of the deaths which occur among horses is in crowded cities, where they work and accumulate to supply the market. And are you surprised at this? Go with me, if you are, some morning about the middle of April, when the sale-stables are full, and see if you cannot account for the destruction of horse-life which is so disastrous, and so supinely deplored. In the long rows of stalls stand the patient victims of man's cupidity and thoughtlessness, waiting to be transferred to the scenes of their labors. They have come flocking in from

the fresh air of their native hills, from the sweet hay-mows and airy stables of their rural homes, from the repose of a farm and the untainted freshness of country life. They have suddenly been brought from all this healthy and invigorating existence to the heat and tumult, and stifling air, and musty hay, and heated corn, and poisoned water, of a crowded, ill-ventilated, smothering stable. Pricked hourly out of that torpor into which such influences throw them, and goaded into a sort of feeble animation to attract a customer, put to the utmost stretch again and again "for the sake of a trade," is it surprising that they should lose their balance and their health, and become a prey to every variety of inflammatory disease known to veterinary practice? These poor dumb victims are compelled to live where man would perish, and are expected to retain their energies where he would faint and fall. Now, in the name of humanity and ordinary commercial thrift and sagacity, let this be stopped. There is no reason why sale-stables should be horse-hells; no reason why they should vie with the Black Hole in their inevitable cruelty and destruction and gloom. These, and city stables generally, except those belonging to private gentlemen, and here and there a livery, are a disgrace and a shame to a civilized community. So long as they continue as they now are, horses must die. There are no remedies for the sudden and violent diseases which will attend such poisonous air and water and food. The remedy lies in providing ample and well-

ventilated stables, — stables well lighted, with stalls of ample dimensions, with escape-pipes for the ammoniacal effluvia which arise from so many animals and their excretions, with more room for evaporation, and then the chances would no longer be against every horse who passes through those doors, as they were against those ghostly ones who passed through Dante's gate, and, as they went in, read above their heads, —

"Per me si va in eterno dolore."
"Who passes here goes into everlasting hell."

Improve the stables, then, and prevent disease. Give the young horses more and better food, — more sweet hay, and less sour grain. In all the stables, public and private, give them better air, broader stalls, cleaner feed-boxes, better floors, and fewer stenches. Do not insult a respectable animal who has come down from the country to do his share of the work of the world, and has brought with him the memory of the sweet hills and skies at least, by immuring him in one of those cramped, rickety, rotten, stinking, slovenly, damp dungeons, where a dumb beast would lose his breath, and his self-respect, and his courage, beneath an oppressive weight of miasmas, and hideous, gloomy, nasty confusion. Stop this, or pray that horses may die ere the evil days come.

But, sir, I shall be reminded, I am sure, of that unfortunate and trying tendency of almost every horse, however well he may be cared for, to become more or less

unsound. I know this is so. The horse has, partly by an inheritance of defects which are very apt to attend a delicate organization, and partly through the abuse to which he is subjected from his youth upwards, a liability to break down in many points where it would seem as if Nature should have guarded and strengthened him with peculiar care. That he becomes spavined and ring-boned and curbed and splinted and broken-winded and sore-toed, I will not deny. But all these seem to me to grow out of man's determination to spoil his horse; for when we remember that the horse's foot is the strongest structure of the kind in all the animal kingdom, and that his hock is the most ingeniously packed and contrived, and his fore-leg the best constructed to receive a blow, and his pasterns the finest combination of elasticity and strength, and his lungs the largest and most capacious, we can understand what long generations of hardship and misuse he must have passed through to bring upon each one of these important and naturally powerful organs a peculiar disposition to break down. If you were to examine a horse for the first time, you would say, "That foot cannot fail, no matter how hard the road; that pastern will not give out; that hock-joint will not yield to the hardest strains; those lungs will endure through all long and severe driving on road or track." And the fact that they do fail, and have so long failed, that they are liable to congenital maleformation, is merely a proof that no machine could be subjected to such strain as falls

upon the horse, without breaking; no animal organization could possibly endure it without serious, almost incalculable, injury. It is useless, therefore, to close our eyes to this natural and artificial defect in the horse; and, bearing in mind that he has been brought to this condition by his hard service for man, it seems to me, that, instead of condemning him for his weakness, we ought to help him out of his trouble.

For one, sir, I do not condemn a horse on account of unsoundness until I am satisfied that he has got beyond an alleviating remedy, and has become useless. I think one of the most touching sights in the world is a lame or disabled horse engaged in his daily toil. I realize how he came to this painful condition; and I feel that I am under a sort of sacred obligation to bear patiently and generously the defects of my own faithful servant. So I am always slow to condemn a horse for unsoundness: in the first place, on account of my charity for him; in the next place, because nearly every horse has some defect, of more or less importance, which one must bear and excuse; and, lastly, because, taken in season, and properly treated, almost every form of unsoundness can be alleviated, and virtually removed for all practical purposes. It is idle to expect Nature, unassisted, to cure unsoundness; and it is useless to hope to remove it in any form by neglect. It is neither wise nor humane, either to shut your eyes to the first approaches of the local difficulty, or to delay your attention to it when discovered, in the hope that somehow

the horse himself will find his way out. I hardly know any calamity, large or small, in which delay is so tempting, and hope so strong, as the misfortunes which befall our favorite horses, and that special colt so full of promise.

If your horse is lame, then, realize the fact as quickly as possible, and attend to it. Locate the lameness where it manifestly is, or where it is most likely to be, even if there is a hopelessness about it; and allow no friend or surgeon to flatter you with the suggestion that the trouble is temporary, trivial, confined to some comparatively unimportant point, and, in your horse at least, is not what it would be in every other horse about you. If the lameness is "forward," you may, in nine cases out of ten, infer that the trouble is in the foot, unless you can discover some manifest enlargement of the bones or sinews. Shoulders are seldom lame. It is the foot which is most exposed: it is the foot which is most affected by the action of the shoulder and leg above it; so that many wise observers have insisted upon it that any foot will stand, if rightly managed by the muscles which move it: and it is the foot whose diseases are most difficult to cure. There is no lameness so perplexing, annoying, and discouraging. It puts an end very effectually to a horse's fast work, and enrolls his name among the slow movers on the farm or in the family-carriage. Rest, cold water, Miles's tar-ointment (to stimulate the growth around the coronet), a cool brick floor, with perhaps a blister or two, will almost always relieve the

early stages of the disease, and give the horse comfort, and ability to discharge well the service of a quiet life. But laminitis and navicular disease do not surrender so easily, and are as troublesome as the gout when they find their way into the luxurious horse-circles, — those circles in which they are most usually found.

So, too, of ring-bone and spavin. More conspicuous than diseases of the foot, they are more easily managed. I would never resign a promising young horse on account of the appearance of these diseases; and I would never neglect them until they were past relief. I once removed from the pasterns of a likely two-year-old, by a couple of blisterings, what I was told in mild phrase were "spreads," but what, had they been let alone, would have been nugbones in all their deformity; and so effectually did I remove them, that, at four years old, the enlargements were not visible, except on the most careful inspection. Two of the best horses I ever bred, two of the best that anybody ever bred, became diseased in their hocks at four years old, and were threatened with incurable lameness. They were too good to be wasted. I could not bear the thought of their being cripples for life. They were fired and blistered as soon as the spavin manifested itself; were given a year's run at grass and in the winter-yard; and have done constant work on the road from that day to this, without the slightest appearance of even stiffness in their joints. I do not think their speed, even (and they both have a great deal of it), has been reduced a particle. I am

aware that the loss of six months or a year in the working-time of a horse is a serious matter for most men who use horses. But, to such as work them simply for what they can earn, this remedy is cheaper than the ultimate loss of the animal altogether; and, to those who are breeding and preparing them for the market, it must be economy to take hold of these defects in season, and treat them promptly and summarily. Hardly a local disease can be named which will not yield to this summary process, and rest. If there is any check to be put to cribbing, for instance, — that most mysterious and unaccountable of all diseases of horses, a diseased habit which is often acquired, and which I have seen inherited, — it is by instantly removing every object which can be seized with the teeth, and by regulating the food. So, too, of swelled legs, scratches, corns, false-quarter, thrush, and other difficulties which arise from neglecting either the general condition of the horse, or from injudicious use. Into the intricacies of veterinary practice I have no idea of entering; nor do I propose to give an elaborate description of diseases for the gratification of curiosity or the inculcation of science. I can only suggest the fundamental principles of dealing with the ills to which the horse is heir, — principles which, if adopted, will insure economy to the master, and comfort to the animal, and the neglect of which may lead to an endless train of expensive surgical experiments, and complicated and incurable disorders.

And now, Mr. Chairman, it is time that I should

bring my remarks to a close. I might say much upon the structure of the stable; but I trust the hints I have dropped on this topic, as I have dealt with others, will answer the purpose at this time. I should like to discuss the subject of shoeing: but I am aware how much has been said, and how little taught, on this matter already; and I should be sorry to add my share to the stock of speculation already existing, and which, when we consider the thousands of horses who wear the various shoes designed by Turk and Arab and Italian and Russian and Frenchman and Englishmen and American, must be largely mere speculation; otherwise myriads of horses would be unable to stand or step. It has been my special desire to satisfy those of you who have listened to me so long, that the subject of hippology needs no extravagant elaboration, but is in all its principles, whether dealing with health or disease, so simple to a practical farmer, that no man need err therein. I am satisfied that it is not half so difficult to select a good horse as some suppose, if you will only see exactly what is before your eyes, and not allow yourself to be misled either by your own imagination, or by the persuasive words of him, who, finding you in want of a horse, feels that it is his mission to see that you are speedily supplied. I have observed that the purchasers of horses deceive themselves much oftener than they are deceived by the dealers. It requires no great keenness to discover a spavin as big as a hen's egg, or a broken wind heaving the sides like a blacksmith's

bellows, or a disposition to shy at a wheelbarrow or a locomotive, or a dead and palpable lameness: but it does require considerable judgment to discover the real merit of a horse when he appears to be offered to you at a price far less than he cost on the farm where he was raised; it requires a great deal of self-possession to resist the prophetic story of the speed which a green colt will undoubtedly develop when he begins to gather up that stride which now occupies the larger portion of a wide street. It is not easy for an admirer of the horse universal, and a careful student of his characteristics and points, to look at him just as he is in his entire make-up, his *tout ensemble*. The mind is liable to be occupied with one predominant point, — the last point of distinction, most likely, which marked the last great trotter. Ethan Allen has a splendid shoulder; and so his admirers buy shoulders. Lady Suffolk has a powerful and symmetrical quarter; and her devotees never cease to dwell upon and deal in hindquarters. A Knox head will mislead the Knox men; a Fearnaught loin will blind the Fearnaught men. And so, among twenty gentlemen whom I met buying horses last spring, the only one who got a really good horse was the man who knew nothing about him, except that he filled his eye. He had no imaginary faults to reject, no imaginary virtues to admire. He knew no more after he had looked into a horse's mouth than if he had looked into a coal-scuttle. He did not know the difference between an Ethan Allen shoulder and a

shoulder of lamb, between a Fearnaught loin and a loin of veal, between a Lady Suffolk hind-quarter and a hind-quarter of mutton: he only knew what a young-looking, vigorous, strong, good-driving, bay family-horse was, that measured by a rod fifteen hands and two inches, and weighed on the scales ten hundred and fifty pounds; and he bought him at a price which he had fixed in his mind as his horse investment for this season, when the spring opened, — the sum he could afford to spend in this direction. The same kind of level common sense guided this man in this most difficult of all branches of business — the purchasing of a horse — that makes a man a statesman, and not a politician; a merchant, and not a speculator; a jurist, and not a pettifogger; a long-lived orator, and not an incendiary exhorter; a sagacious general, and not a military martinet, — the same kind of common sense, though perhaps less in degree, but none the less entitled to our admiration, inasmuch as it leads men to strike the effective blow, and perform the effective deed, and remove the entangling complications, which impracticable and imaginative gentlemen are apt to weave around practical affairs; that common sense, which, while strong in itself, always receives healthy invigoration from the highest culture and the most varied experience.

Mr. Chairman, there are a great many horses in the United States; and I am happy to say that every member of this family is counted as a horse for some purpose. By the census, I learn that there are 7,145,370

horses in this republic, — a horse to about every six persons, male and female, old and young, black, white, and mixed. There are 23,820,608 cattle; of which number, 8,935,332 are cows, 1,319,271 are oxen, and 13,566,005 are called *other* cattle, — an undefined distinction not known, I am happy to say, among the horses. For this vast number of horses, whose purpose is fixed and defined, I appear to-night before this small body of the founders of the New-England Agricultural Society. Of their industrial and commercial value it is unnecessary for me to speak here among those who know what a large portion of the wealth of our great grazing-farms they represent. That they will always have advocates, I cannot for a moment doubt. Their history has a charm which appeals at once to the farmer's boy as he sits by the fireside perusing his scanty but appropriate library. Their services will always be held in high esteem by all those who enjoy what is energetic and active and progressive in life, and who believe in the superior importance of vigorous and manly effort. They have already passed into the literature of the world; standing by the side of the warrior on the battle-field; bearing the monarch in his pride, the maiden in her sweetness and grace, the lover in his ecstasy and joy; adorning the triumphal pageant, and solemnizing the mournful procession. Of the horse have poets sung; art has immortalized him; science has devoted herself to his comfort and health; and man has always hastened to bestow upon him with a liberal hand his largest and

most lavish bounty. He is intimately associated with all those scenes and events which make life dear and sacred to us; and, as he has found his eulogists in the past, I doubt not that hereafter he will still receive from devoted friends in every walk in life that tribute to which he is entitled as man's most brilliant ally in the work of the world. He has already had a high place assigned him among the objects which occupy and absorb the minds of men; and I trust the day is not far distant when it will be deemed worthy of some large-hearted and liberal-minded messenger of the divine to lift up his voice for the elevation of this noble animal into his proper place, — above the fears of the prudent and the suspicion of the good, and for the amelioration of all the hardship of his lot. He has done his duty so well thus far, that of him it has been said by one of the most brilliant of the sons of men, —

"Deduct all that has been achieved, directly or indirectly, by the aid of the horse, in the way of conveyance at home, from place to place, for business or recreation; of distant journeyings before the power of steam was so wonderfully applied to the purposes of locomotion; of the draught of heavy burdens; of motive-power connected with machinery, of agriculture, and of war, in all countries and in all ages, — deduct all that has been done, directly or indirectly, in all these respects, by the aid of the horse, and what a stupendous abatement you would make from the sum total of achievement and progress!"

And now, sir, you will allow me, in conclusion, to repeat an interesting and touching account of the relations which existed between one of the most illustrious of our own race and one of the most fortunate of that race for whose cause I am now speaking. How well I remember it as it fell, not many years ago, from the eloquent lips of Edward Everett! After urging for the horse persevering kindness, and asking if this would not also be beneficial and honorable among fellow-men and fellow-Christians, he said, —

"However this may be, sir, if there is any one who doubts that the horse — the animal that most concerns us on this occasion — is susceptible of the kindest feelings of our nature, I think he would be convinced of his error by a most interesting anecdote of Edmund Burke. In the decline of Mr. Burke's life, when he was living in retirement on his farm at Beaconsfield, the rumor went up to London that he had gone mad; and the fact that was stated in support of this rumor was, that he went round his park kissing the cows and horses. A friend, a man of rank and influence, hearing this story, and deeming it of too much importance to be left uncorrected, hastened down to Beaconsfield, and sought an interview, with the view of ascertaining the truth of the rumor. He entered into conversation with him. Mr. Burke read to him some chapters from his 'Letters on a Regicide Peace.' His friend immediately saw, that, though his earthly tenement was verging back to its native dust, the lamp of reason and genius shone

with undiminished lustre within. He was accordingly more than satisfied as to the object of his coming down, and, in a private interview with Mrs. Burke, told her what he had come for, and received from her this pathetic explanation: —

"Mr. Burke's only child, a beloved son, had, not long before, died, leaving behind him a favorite old horse, the companion of his excursions of business and pleasure when both were young and vigorous. This favorite animal was turned out by Mr. Burke the father into the park, with directions to all his servants that he should in every respect be treated as a privileged favorite. Mr. Burke himself, of course, in his morning walks, would often stop to caress the favorite animal. On one occasion, as he was taking his morning walk through the park, he perceived the poor old animal at a distance, and noticed, in turn, that he was recognized by him. The horse drew nearer and nearer to Mr. Burke, stopped, eyed him with a most pleading look of recognition, which said, as plainly as words could have said, 'I have lost him too;' and then the poor dumb beast deliberately laid his head on Mr. Burke's bosom. Struck by the singularity of the occurrence, moved by the recollections of his son, — whom he had never ceased to mourn with a grief that would not be comforted, — overwhelmed by the tenderness of the animal, expressed in the mute eloquence of holy Nature's universal language, the illustrious statesman for a moment lost his self-possession, and, clasping his arms around the neck of his son's

favorite animal, lifted up that voice which had filled the arches of Westminster Hall with the noblest strains that ever echoed within them, and wept aloud.

"This was seen and was heard by the passers-by; and the enemies of Burke, unappeased by his advancing years, by his failing health, by his domestic sorrow, made it the ground of a charge of insanity. 'Burke has gone mad.' But, sir, so help me Heaven, if I were called upon to designate the event or the period in Burke's life that would best sustain a charge of insanity, it would not be when, in a gush of the holiest and purest feeling that ever stirred the human heart, he wept aloud on the neck of his dead son's favorite horse; but it would rather be when, at the meridian of his fame, when the orb of his imperial genius rode highest in the heavens, amidst the scoffs of cringing courtiers, and the sneers of trading patriots, he abased his glorious powers to the scramblings and squabblings of the day, and,

'Born for the universe, narrowed his mind,
And to party gave up what was meant for mankind.'"

Mr. Chairman, I have done. If I have occupied more time than I ought, I beg you to charge it to the subject, and not to myself. I am anxious that this society should do its duty in every department assigned it; and I especially desire that it should correct, by a wise and judicious devotion to all the interests of agriculture, any error into which we may have fallen, and raise the entire industry to a high and dignified plane.

I thank you for your courtesy in listening to me, and shall heartily unite with you in any service to which we may be called for the benefit of that occupation to whose advancement this assembly is devoted.

Mr. Osgood sat down. The story of Burke had moved that little audience as if the experience had been to each a personal sorrow. The horse had secured his position in the minds and hearts of all present; and his *status* in the New-England Agricultural Society was fixed forever.

Mr. Jones, who had listened through the extended discourse, "amazed," as he was kind enough to say, "at the unexpected outburst of wisdom, wit, and pathos," which, during those long, late hours of night, had charmed himself and his friends, rose, extended his hand to Mr. Osgood, and cordially thanked him for all that he had said.

Gen. Greene moved a vote of thanks for the address; adding, "that a copy be requested for publication." The vote was passed unanimously.

By this time "his taper faded," and the early "morning gales" fanned the brow of Mr. Osgood as he strolled to his room in the American House, wondering how he had made that speech, and how in the world he was ever to furnish a copy for publication.

The next day found him at home on his farm, wandering moodily up and down his ample barns, surveying his long rows of well-fed cattle, and turning now

and then a somewhat uneasy eye to his horses, who had, until this hour, been a source of unalloyed peace and joy to him. In every limb of theirs he saw that speech, a copy of which he was "to furnish for publication."

The occasion was too much for him. He could get no peace, until, as he sat musing before the fire on that long winter evening, listening to his own thoughts and to the busy clicking of Mrs. Osgood's knitting-needles, he said, —

"Jerusha, I have made a speech."

"Made a what?" said Jerusha.

"Made a speech, my dear," said he, — "all about horses; and I have agreed to furnish a copy of it to the New-England Agricultural Society for publication."

"Are you a-going to write it out, John?" said Jerusha.

"No," said he: "I can't do that. The chairman is going to write it out for me. He is a great writer, they say."

"Now, John," said Jerusha, looking a great honest look at him over her spectacles, "that will never do. If the chairman writes out that speech in his own language, say so like a man, either at the beginning, or middle, or end of the book."

John's countenance fell. But there it was recorded, and there it may be found, — "Revised and written out by the Chairman;" and Jerusha is content.

MY OBLIGATIONS.

To all the good horses that I have ever owned, who by their fidelity have won my regard, who by their devotion have secured a place in my affections, who have obtained for their race my best efforts and desires, and whose names fill my heart with the tenderest of memories, I desire to express my obligations for the lesson which I have recorded here.

GEO B. LORING.

PEDIGREES OF NOTED HORSES.

TABLES GIVING PEDIGREES OF NOTED HORSES.

TABLE I.

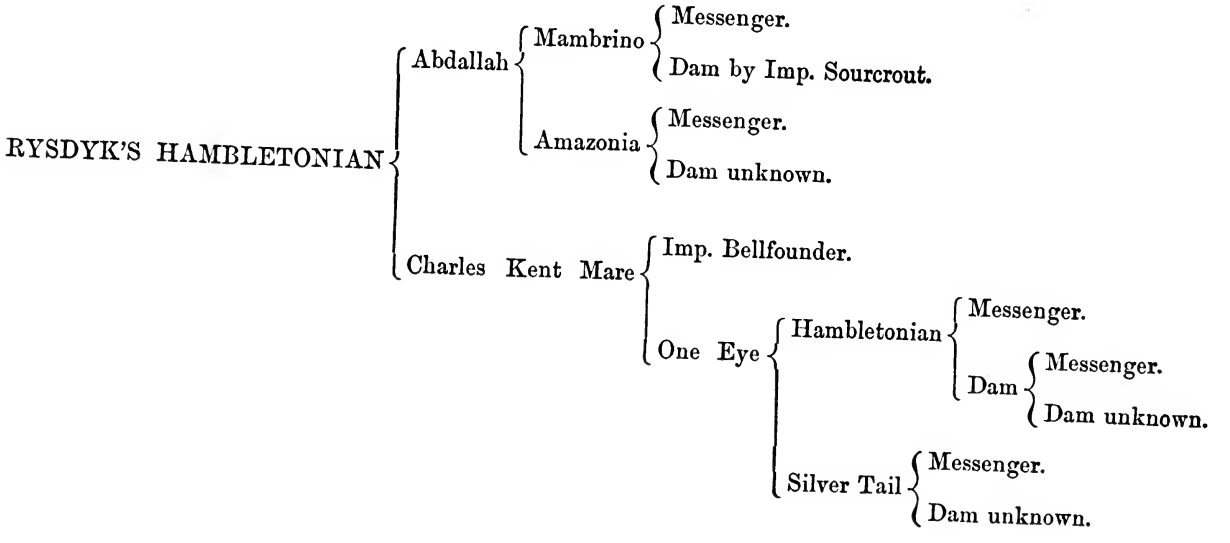


TABLE II.

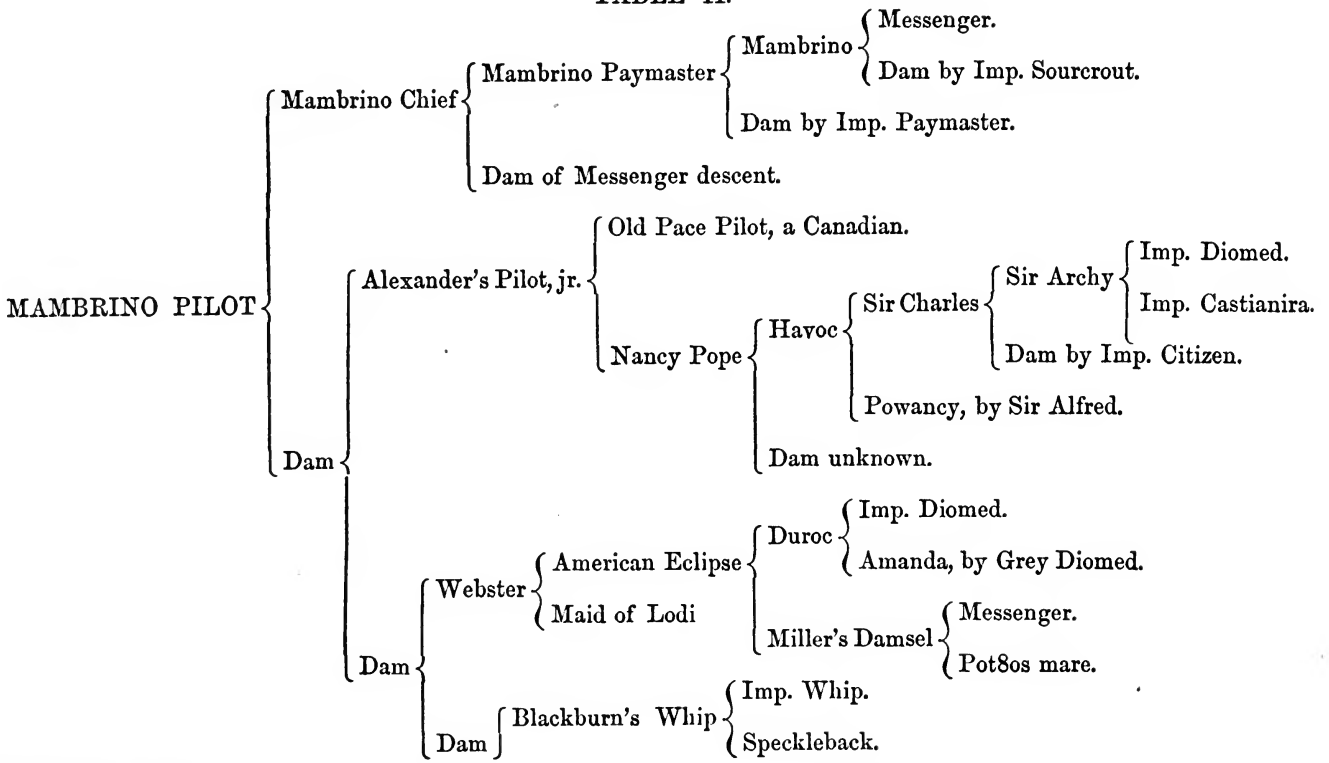

MAMBRINO PILOT
Mambrino Chief
Mambrino Paymaster
Mambrino
Messenger.
Dam by Imp. Sourcrout.
Dam by Imp. Paymaster.
Dam of Messenger descent.
Dam
Alexander's Pilot, jr.
Old Pace Pilot, a Canadian.
Nancy Pope
Havoc
Sir Charles
Sir Archy
Imp. Diomed.
Imp. Castianira.
Dam by Imp. Citizen.
Powancy, by Sir Alfred.
Dam unknown.
Dam
Webster
American Eclipse
Duroc
Imp. Diomed.
Amanda, by Grey Diomed.
Maid of Lodi
Miller's Damsel
Messenger.
Pot8os mare.
Dam
Blackburn's Whip
Imp. Whip.
Speckleback.

TABLE III.

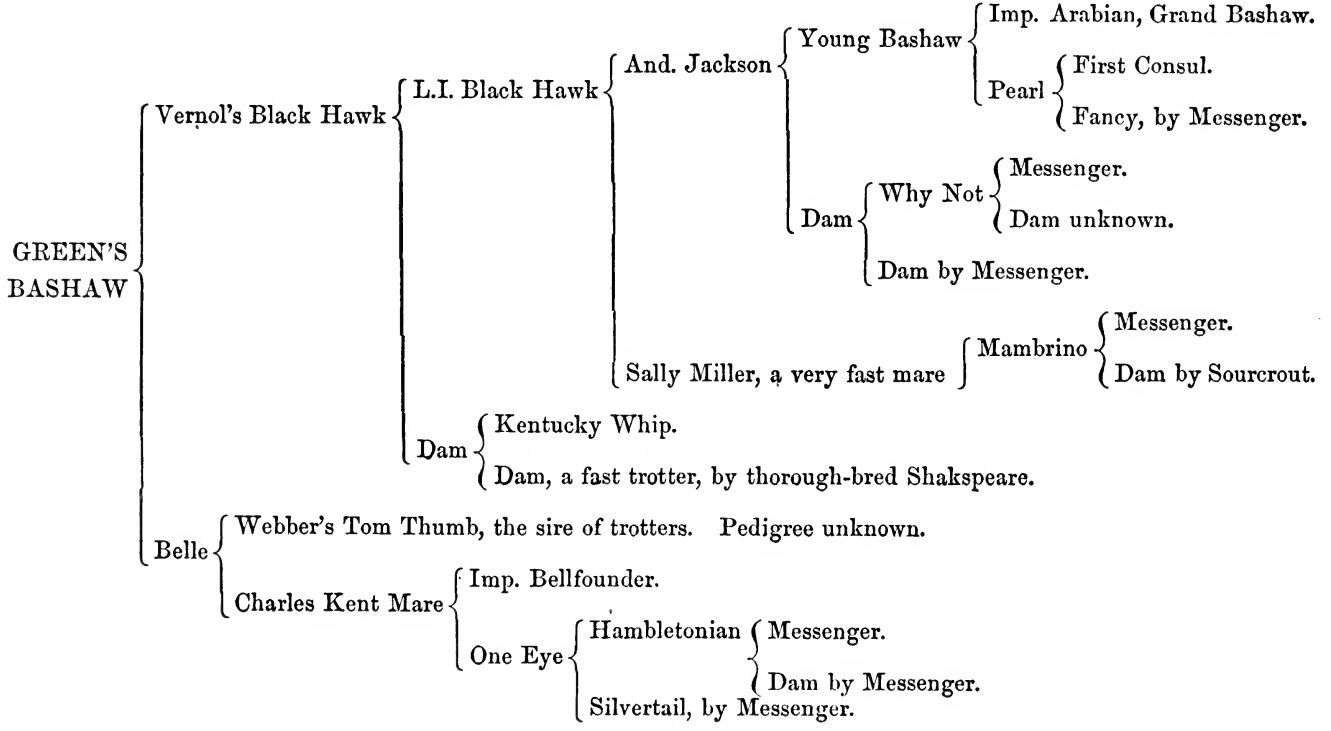

GREEN'S BASHAW
Vernol's Black Hawk
L.I. Black Hawk
And. Jackson
Young Bashaw
Imp. Arabian, Grand Bashaw.
Pearl
First Consul.
Fancy, by Messenger.
Dam
Why Not
Messenger.
Dam unknown.
Dam by Messenger.
Sally Miller, a very fast mare
Mambrino
Messenger.
Dam by Sourcrout.
Dam
Kentucky Whip.
Dam, a fast trotter, by thorough-bred Shakspeare.
Belle
Webber's Tom Thumb, the sire of trotters. Pedigree unknown.
Charles Kent Mare
Imp. Bellfounder.
One Eye
Hambletonian
Messenger.
Dam by Messenger.
Silvertail, by Messenger.

TABLE IV.

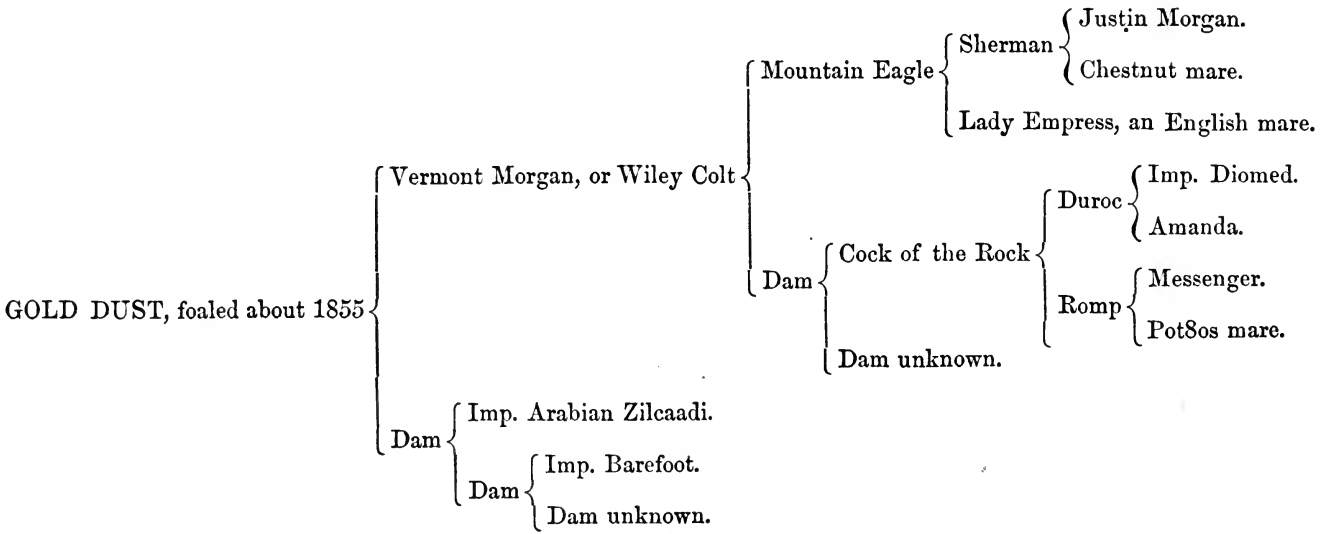
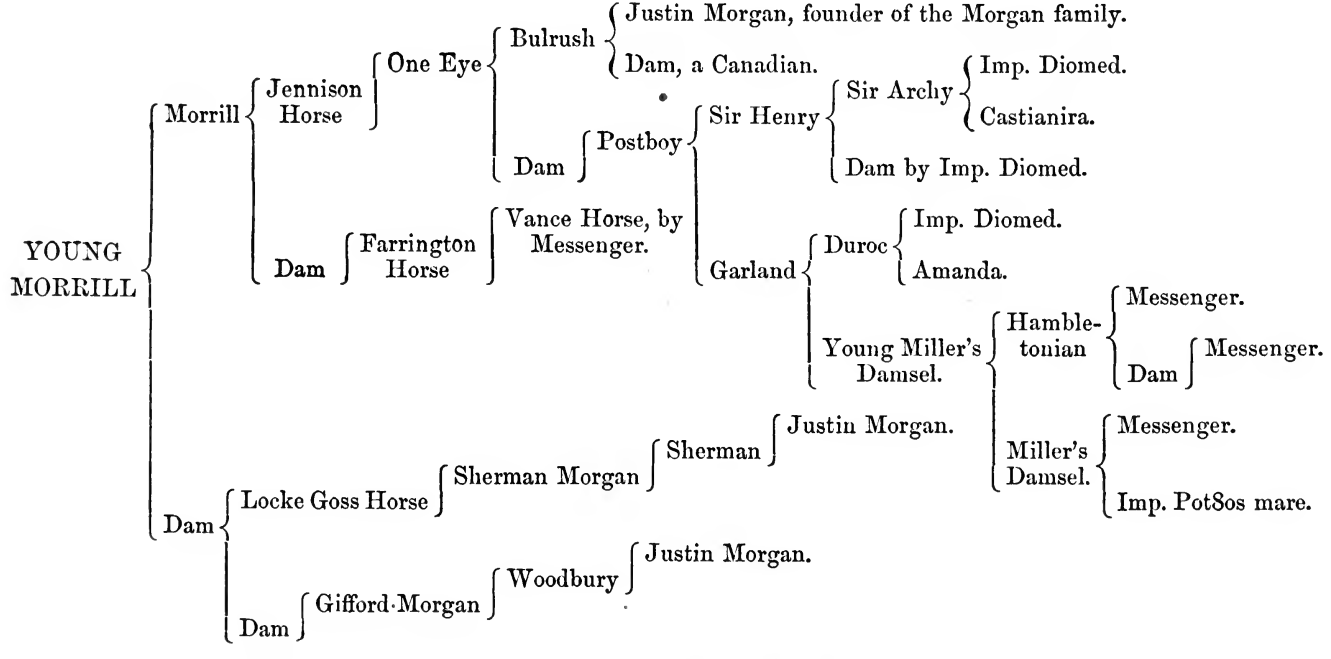

GOLD DUST, foaled about 1855
Vermont Morgan, or Wiley Colt
Mountain Eagle
Sherman
Justin Morgan.
Chestnut mare.
Lady Empress, an English mare.
Dam
Cock of the Rock
Duroc
Imp. Diomed.
Amanda.
Romp
Messenger.
Pot8os mare.
Dam unknown.
Dam
Imp. Arabian Zilcaadi.
Dam
Imp. Barefoot.
Dam unknown.

TABLE V.



[This excellent stock-horse is, as will be seen, nearly a full Morgan. — *Author.*]

TABLE VI.

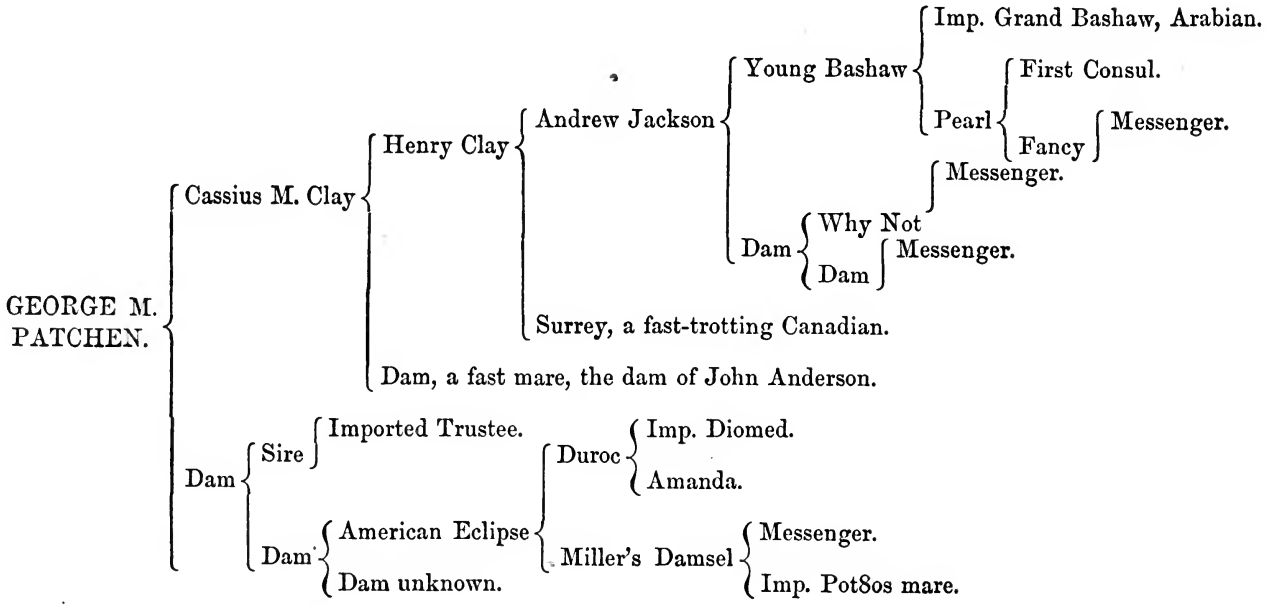

GEORGE M. PATCHEN.
Cassius M. Clay
Henry Clay
Andrew Jackson
Young Bashaw
Imp. Grand Bashaw, Arabian.
Pearl
First Consul.
Fancy
Messenger.
Dam
Why Not
Messenger.
Dam
Messenger.
Surrey, a fast-trotting Canadian.
Dam, a fast mare, the dam of John Anderson.
Dam
Sire
Imported Trustee.
Duroc
Imp. Diomed.
Amanda.
Dam
American Eclipse
Dam unknown.
Miller's Damsel
Messenger.
Imp. Pot8os mare.

TABLE VII.

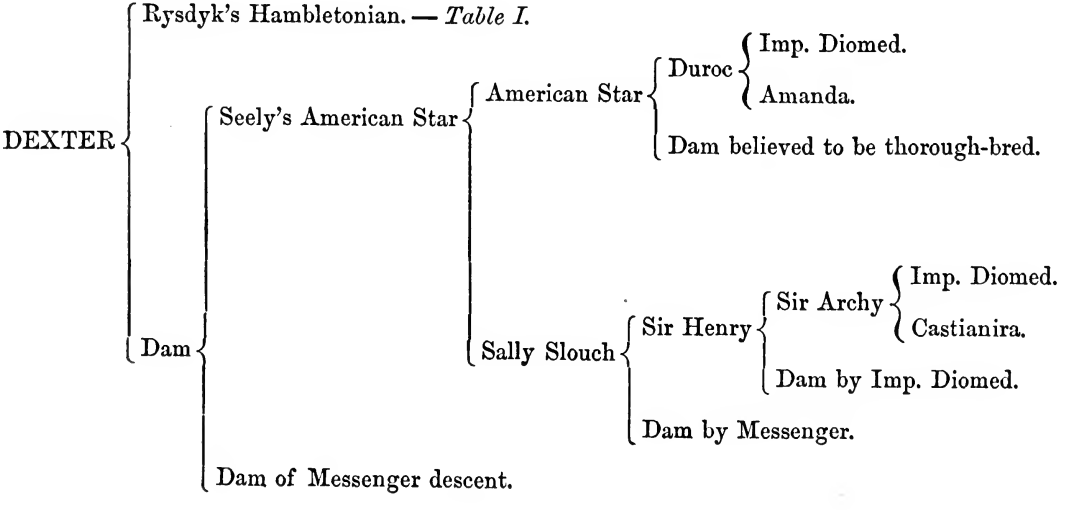

DEXTER
Rysdyk's Hambletonian. — Table I.
Dam
Seely's American Star
American Star
Duroc
Imp. Diomed.
Amanda.
Dam believed to be thorough-bred.
Sally Slouch
Sir Henry
Sir Archy
Imp. Diomed.
Castianira.
Dam by Imp. Diomed.
Dam by Messenger.
Dam of Messenger descent.

TABLE VIII.

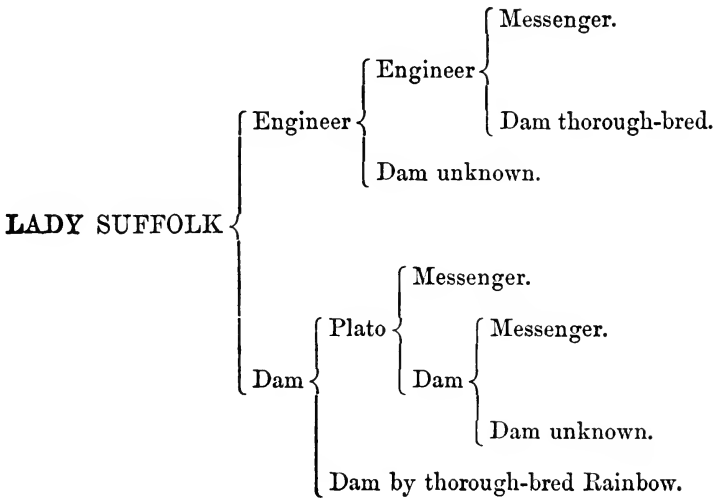

LADY SUFFOLK
Engineer
Engineer
Messenger.
Dam thorough-bred.
Dam unknown.
Dam
Plato
Messenger.
Dam
Messenger.
Dam unknown.
Dam by thorough-bred Rainbow.

TABLE IX.

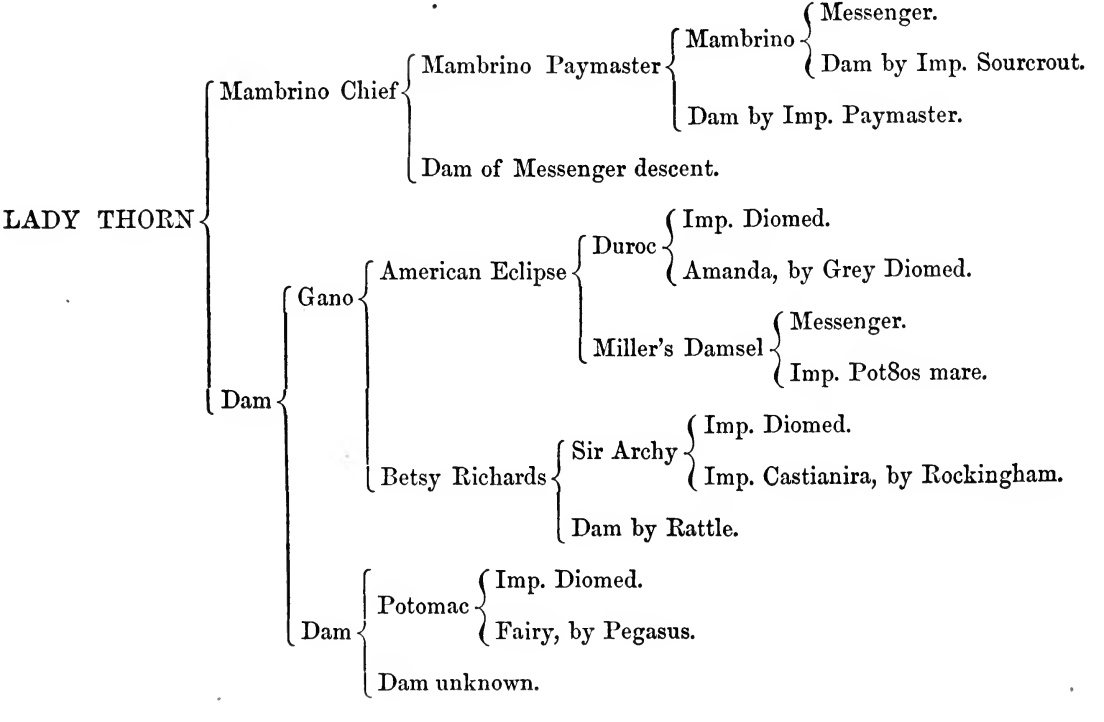

LADY THORN
Mambrino Chief
Mambrino Paymaster
Mambrino
Messenger.
Dam by Imp. Sourcrout.
Dam by Imp. Paymaster.
Dam of Messenger descent.
Dam
Gano
American Eclipse
Duroc
Imp. Diomed.
Amanda, by Grey Diomed.
Miller's Damsel
Messenger.
Imp. Pot8os mare.
Betsy Richards
Sir Archy
Imp. Diomed.
Imp. Castianira, by Rockingham.
Dam by Rattle.
Dam
Potomac
Imp. Diomed.
Fairy, by Pegasus.
Dam unknown.

TABLE X.

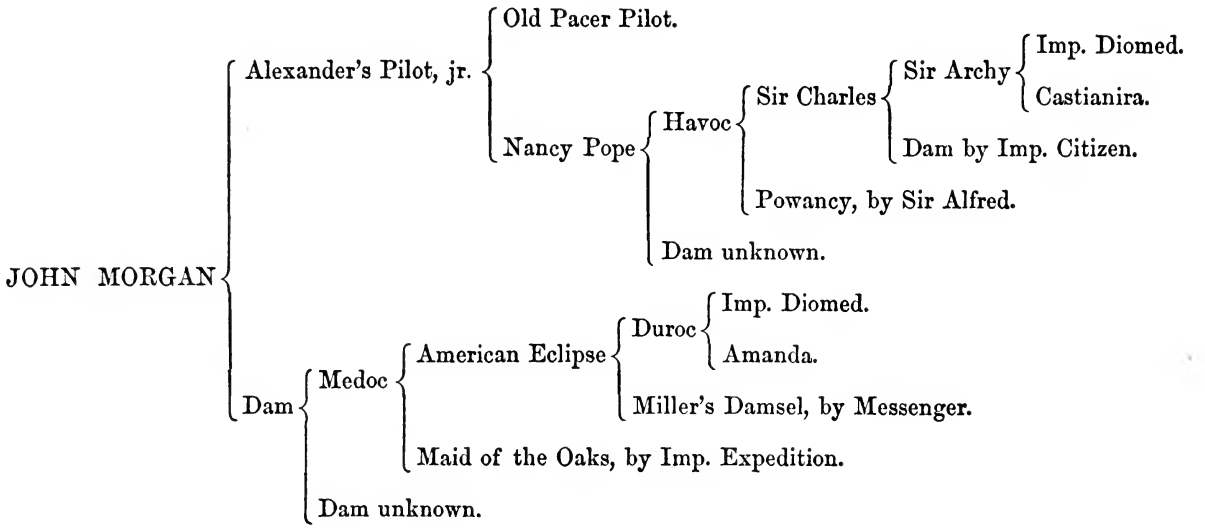

JOHN MORGAN
Alexander's Pilot, jr.
Old Pacer Pilot.
Nancy Pope
Havoc
Sir Charles
Sir Archy
Imp. Diomed.
Castianira.
Dam by Imp. Citizen.
Powancy, by Sir Alfred.
Dam unknown.
Dam
Medoc
American Eclipse
Duroc
Imp. Diomed.
Amanda.
Miller's Damsel, by Messenger.
Maid of the Oaks, by Imp. Expedition.
Dam unknown.

TABLE XI.

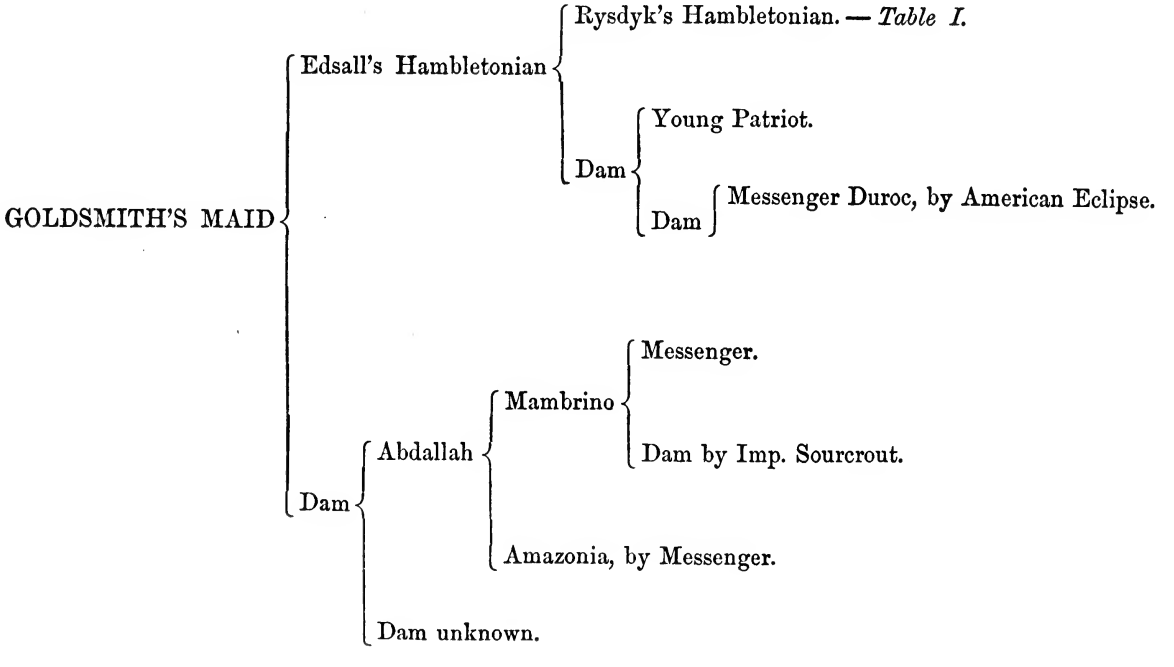

GOLDSMITH'S MAID
Edsall's Hambletonian
Rysdyk's Hambletonian. — Table I.
Dam
Young Patriot.
Dam
Messenger Duroc, by American Eclipse.
Dam
Abdallah
Mambrino
Messenger.
Dam by Imp. Sourcrout.
Amazonia, by Messenger.
Dam unknown.

TABLE XII.

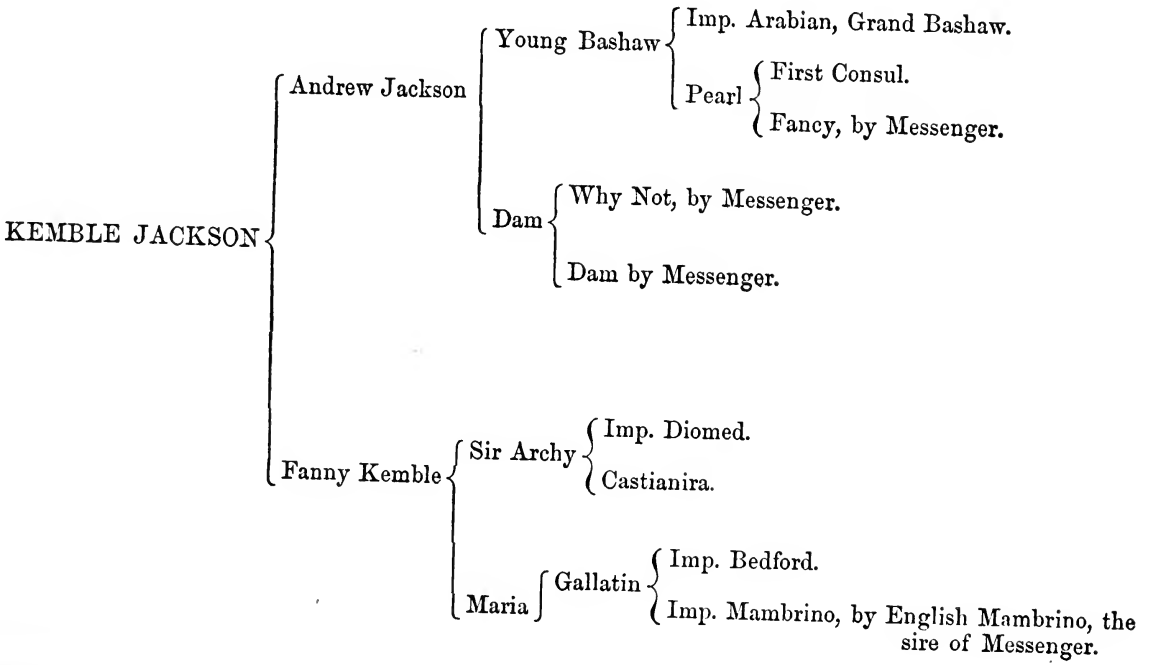

KEMBLE JACKSON
Andrew Jackson
Young Bashaw
Imp. Arabian, Grand Bashaw.
Pearl
First Consul.
Fancy, by Messenger.
Dam
Why Not, by Messenger.
Dam by Messenger.
Fanny Kemble
Sir Archy
Imp. Diomed.
Castianira.
Maria
Gallatin
Imp. Bedford.
Imp. Mambrino, by English Mambrino, the sire of Messenger.

TABLE XIII.

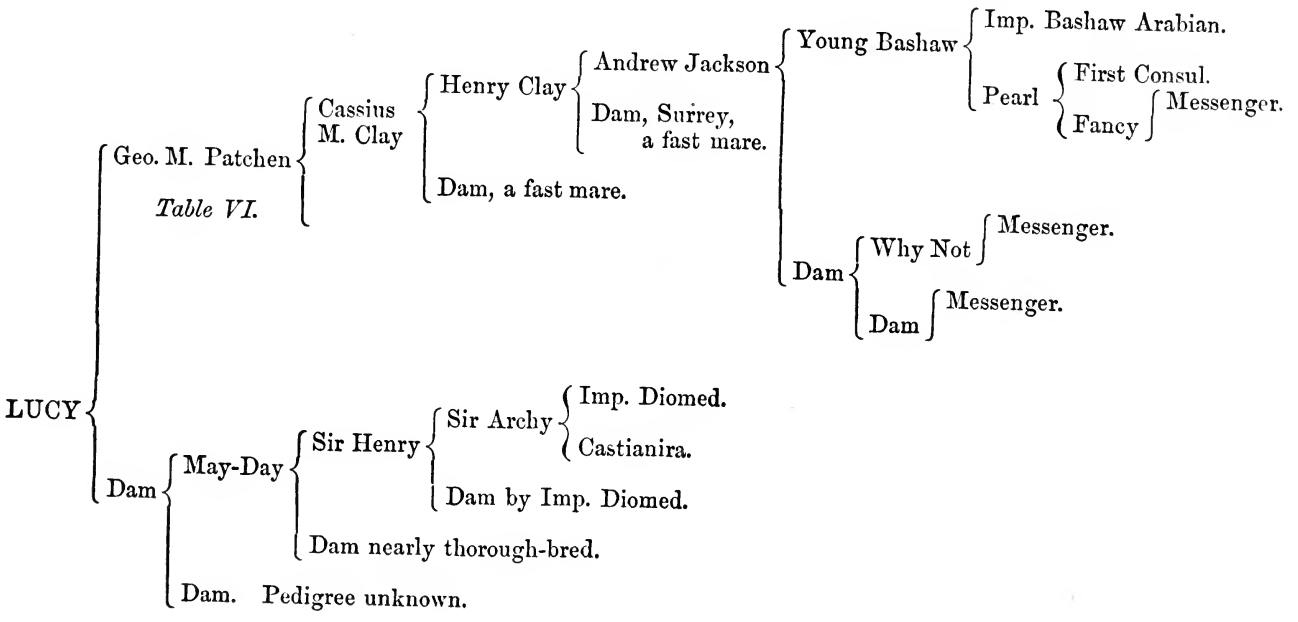

LUCY
Geo. M. Patchen
Table VI.
Cassius M. Clay
Henry Clay
Andrew Jackson
Young Bashaw
Imp. Bashaw Arabian.
Pearl
First Consul.
Fancy
Messenger.
Dam, Surrey, a fast mare.
Dam, a fast mare.
Dam
Why Not
Messenger.
Dam
Messenger.
Dam
May-Day
Sir Henry
Sir Archy
Imp. Diomed.
Castianira.
Dam by Imp. Diomed.
Dam nearly thorough-bred.
Dam. Pedigree unknown.

TABLE XIV.

- **HIGHLAND ASH**
  - Winner of "The Spirit of the Times" stakes for three-year-olds in 1863. Time, 2m. 48s. Stakes, $4,050.
  - Ashland
    - Mambrino Chief. — *Table II.*
    - Utilla
      - Imp. Margrave.
      - Too Soon, by Sir Leslie.
  - Highland Lass
    - Leather-Stocking. Pedigree unknown.
    - Highland Maid
      - Saltram
        - Kentucky Whip.
        - Dam unknown.
      - Roxana
        - Hickory Boy
          - Hickory
            - Kentucky Whip.
            - Dido.
          - Dam unknown.
        - Dam unknown.

TABLE XV.

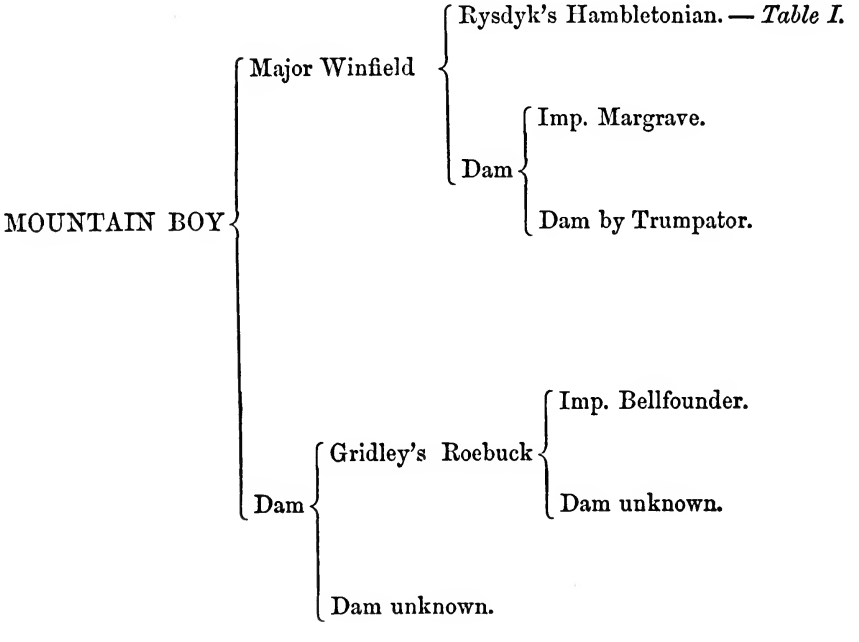

MOUNTAIN BOY
Major Winfield
Rysdyk's Hambletonian. — Table I.
Dam
Imp. Margrave.
Dam by Trumpator.
Dam
Gridley's Roebuck
Imp. Bellfounder.
Dam unknown.
Dam unknown.

TABLE XVI.

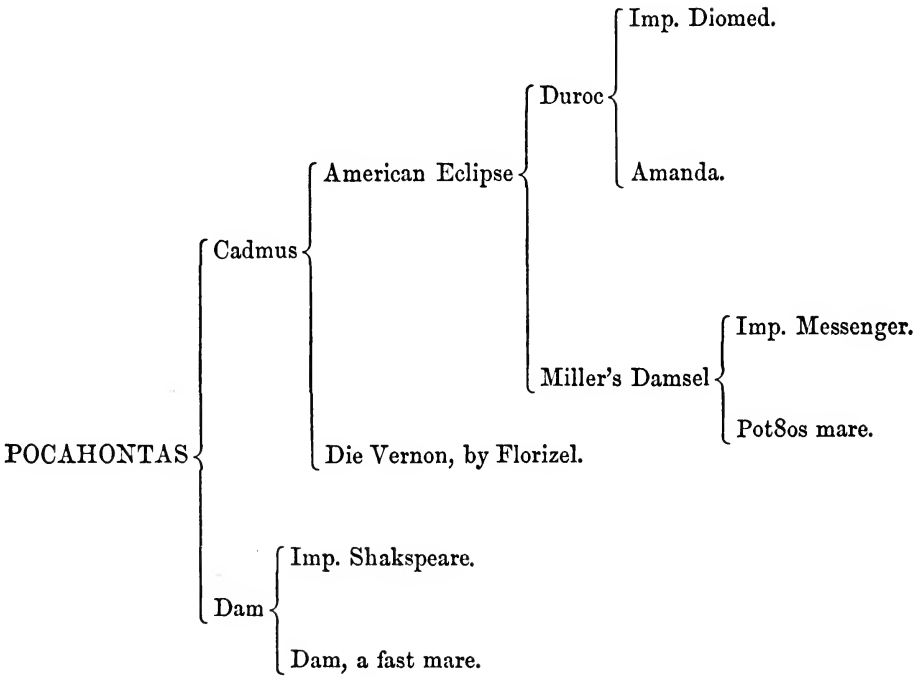

POCAHONTAS
Cadmus
American Eclipse
Duroc
Imp. Diomed.
Amanda.
Miller's Damsel
Imp. Messenger.
Pot8os mare.
Die Vernon, by Florizel.
Dam
Imp. Shakspeare.
Dam, a fast mare.

TABLE XVII.

POCAHONTAS, or BATES MARE { Ethan Allen [Vermont Black Hawk [Sherman [Justin Morgan.
Dam, Pocahontas, by Cadmus (393).

TABLE XVIII.

DANIEL LAMBERT { Ethan Allen [Vermont Black Hawk [Sherman [Justin Morgan.
Dam, Fannie Cook, by { Old Abdallah [Mambrino [Imp. Messenger.
Old American Star [Old Eclipse.

TABLE XIX.

HONEST ALLEN
- Ethan Allen
  - Vermont Black Hawk
    - Sherman
      - Justin Morgan.
- Dam by the Brooks Horse
  - Sherman
    - Justin Morgan.
  - Unknown.

TABLE XX.

JUSTIN MORGAN, b. h.,

"Foaled 1793; got by True Briton (said to be a son of imp. Traveller, out of a mare imported by Col. Delancey); dam supposed to have been of the Wildair breed, and by others supposed to have been by Lindsey Arabian: of the two, the latter supposition is the more probable. But all attempts to give a *satisfactory* account of the origin of this wonderful horse have been abortive, although it might be said volumes have been written on the subject. He doubtless possessed a large share of good blood, as his progeny so uniformly partook of certain fixed characteristics which were his own. This was the founder of that particular race which for so many years were sought for at high prices from all parts of the country, and which made their breeders rich." — *From Mr. Wallace's "American Stud-Book."*

TABLE XXI.

LADY SUFFOLK, gr. m.,

Foaled 1833; got by Engineer, said to be thorough-bred, and a grandson of imp. Messenger (1562); dam by Plato, full brother to Hambletonian (1097½); g. d. by Rainbow (1974).

Bred by Richard Blaydenburg of Smithtown, L.I. She made her first appearance on the trotting-turf in 1838; and for several years, owing to bad management, she could not be said to be successful: but gradually she rose to the highest point of fame and favoritism. She was on the turf nearly sixteen years, trotting a hundred and sixty-one races, winning eighty-eight of them, and $35,011. She was bought by David Hill of Vermont to breed to his famous Black Hawk. She slipped a foal in 1854, and died (1855) without produce.

TABLE XXII.

FLORA TEMPLE { One-eyed Kentucky Hunter. (Perhaps half bred.)
Dam, Madam Temple, by a spotted Arabian horse.

"All beyond this" (Mr. Wallace says in his "Stud-Book"), "in regard to her blood, is mere fancy. In the fall, when she was a weanling, she was sold for thirteen dollars."

TABLE XXIII.

GREEN-MOUNTAIN MORGAN {
Gifford { Woodbury { Justin Morgan.
Dam by Henry Dundas.
Dam by Woodbury Morgan { Justin Morgan.
}

TABLE XXIV.

(See Table V.)

- FEARNAUGHT
  - Young Morrill.
  - Dam by the Steve French Horse
    - Flint Morgan
      - Sherman
        - Justin Morgan.
    - Harpino's
      - Hambletonian
        - Imp. Messenger.

TABLE XXV.

- TAGGART'S ABDALLAH
  - Farmer's Beauty
    - Gifford Morgan
      - Woodbury
        - Justin Morgan.
    - Dam by Grey Messenger
      - Imp. Messenger.
  - Dam by
    - Old Abdallah
      - Mambrino
        - Imp. Messenger.
    - Dam by Imp. Trustee.

TABLE XXVI.

GEN. KNOX { Sherman Black Hawk, or the North Horse ∫ Vermont Black Hawk ∫ Sherman ∫ Justin Morgan.
{ Dam by Vermont Hambletonian.

TABLE XXVII.

ETHAN ALLEN { Black Hawk ∫ Sherman ∫ Justin Morgan.
{ Dam, a small gray mare, that produced several excellent foals, and *said to be of Messenger blood* (very doubtful. — *Author*). J. H. Wallace, Esq., in his "American Stud-Book" (which every horseman should own), vol. i. Trotting Supplement, says, "From a variety of causes, this horse has always had to contend with unjust prejudices; but the truth is, he is one of the most remarkable animals this country has produced. He is beautiful, kind, and, in most respects, blood-like. When three years and ten months old, he trotted in 2.42, 2.39, 2.36; and when eighteen years old (June 21, 1867), on the Fashion Course, with a running mate, he made the wonderful time, — 2.15, 2.16, 2.19."

TABLE XXVIII.

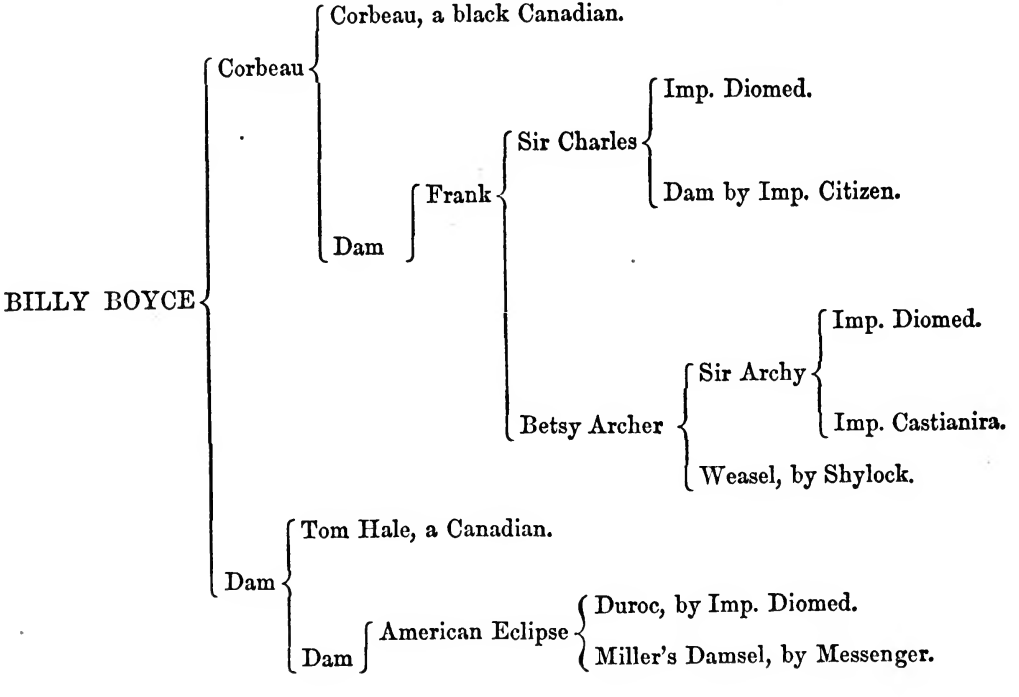
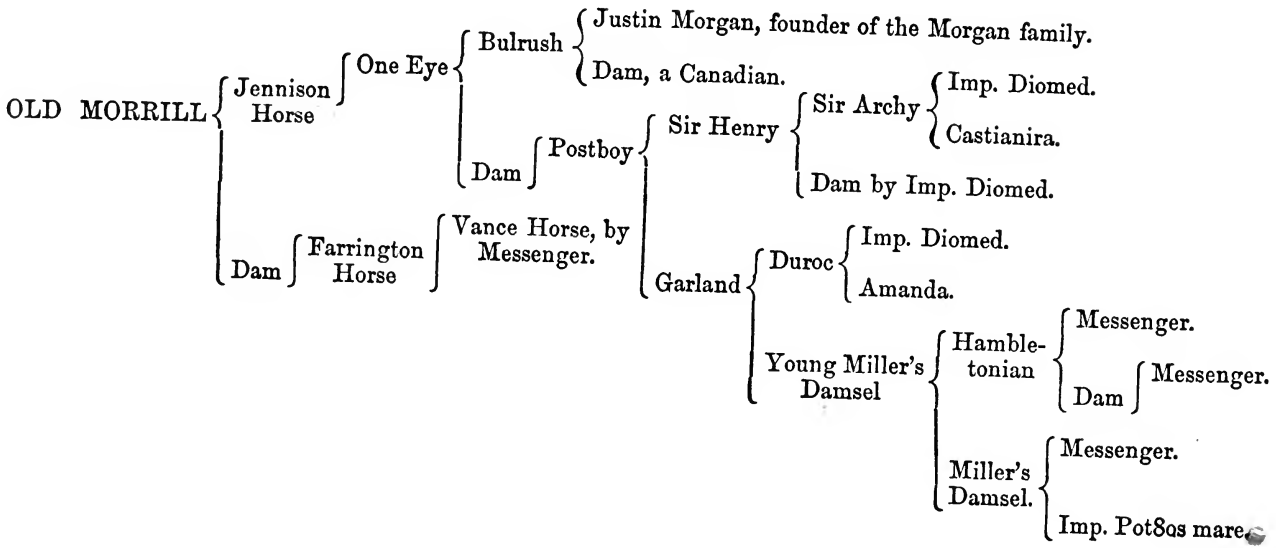


TABLE XXIX.


OLD MORRILL
Jennison Horse
One Eye
Bulrush
Justin Morgan, founder of the Morgan family.
Dam, a Canadian.
Dam
Postboy
Sir Henry
Sir Archy
Imp. Diomed.
Castianira.
Dam by Imp. Diomed.
Dam
Farrington Horse
Vance Horse, by Messenger.
Garland
Duroc
Imp. Diomed.
Amanda.
Young Miller's Damsel
Hambletonian
Messenger.
Dam
Messenger.
Miller's Damsel.
Messenger.
Imp. Pot8os mare.

HOW TO LAY OUT A MILE TRACK.

Select a level field of 42 acres: draw through the centre of it a straight line of 440 yards (a quarter of a mile). On each side of this line, and at an exact distance of 140 yards from it, draw parallel lines of equal length, so that the space between the two outer lines will be 280 yards. This being done, drive a stake at each end of the centre line; fasten a cord thereto; extend the cord at right angles for 140 yards until it touches the end of the outer line, and then describe with the extreme end of the cord an outer curve or semi-circle between the ends of the two outer lines. You will then have the shape you want; the continuous outer line describing it being exactly a mile (1,760 yards) in length, divided into four sections of a quarter-mile (440 yards) each, and enclosing 42 acres of ground. From this outer line, or track, set the fence of the course three feet back on the straight sides and curves. In this way an exact mile (as near as may be) is preserved for the actual foot-track of all the horses. In brief, then, mark out for your course a parallelogram of 440 yards long, and 280 yards wide, with curves thrown out at the ends, of equal length with the sides, and you have the course you want. The first distance-post is placed 60 yards from the judges' stand; the second at 240 yards; and the *start* is 60 yards before entering the turn. The track should be graded round the turns like the track of a railroad or circus, the outer portion highest, so that a horse can extend himself at full speed as well around the turns as on the straight sides.

GALLERY OF CELEBRATED HORSES.

GALLERY OF CELEBRATED HORSES.

In respect to the horses whose description and pedigrees are herein presented to the public, I would say that they were selected by the author, independent of the publishers, and solely because of their merits. While I do not propose to say that no horses which do not appear in this book are not worthy of patronage, — for there are many of great excellence in the stud not included in this list, — my idea was to bring together a list of truly *great* stock-horses, according to my understanding of what constitutes greatness in horses kept for breeding-purposes, and without the fear or favor of any, and as devoid of prejudice as the mind of man may be. Unknown to the publishers of this work and the owners of the horses, certain were selected as worthy in every respect of public patronage; in short, such horses as I would confidently breed from myself.

Regarding them in this light, I cordially recommend them to the breeding public. I wish it to be understood that the words with which they are advertised are those of their respective owners, not mine.

THE AUTHOR.

TAGGART'S ABDALLAH.

Foaled 1859. Bred and owned by D. M. Taggart, Goffstown, N.H.

PEDIGREE IN FULL.

TAGGART'S ABDALLAH. — Sire, Farmer's Beauty; dam, Lady Mack.

FARMER'S BEAUTY. — Ch. h.; foaled 1842; got by Gifford Morgan, son of Woodbury Morgan; dam, a mare that was called a Messenger at that day. Her sire was spoken of as Grey Messenger, and sometimes Freeman's Messenger, which was a son of Ogden's Messenger. Bred by Dr. Thatcher, Wells River, Vt.; purchased 1844 by D. M. Taggart, Goffstown, N.H.

LADY MACK. — Ch. m.; foaled about 1843; got by the famous Abdallah; dam by imp. Trustee, 2601; g. d. not traced, but known to be from racing-stock. Bred by Dr. Conover, Freehold, N.J.; sold to J. Doty, and by him to W. McRoberts, New York; then to Jos. L. Noyes, Lowell, Mass.; then to E. T. Northend, Newbury; then to J. E. Remick, Newburyport, Mass. Repurchased by J. L. Noyes, and bred to Thurston's Young Black Hawk; sold to Dr. Dean Robinson of West Newbury; and, after raising two colts, sold to J. O. Loring, N. Andover, Mass.: from Mr. Loring, in 1854, she went to S. W. Hopkinson, Bradford, Mass.; and in 1856 to D. M. Taggart, Goffstown, N.H.

GIFFORD MORGAN. — Foaled 1824; got by Woodbury Morgan, son of the original Justin Morgan; dam by Henry Dundas; g. d. said to be by True Briton; g. g. d. by imp. Wildair. Bred by Ziba Gifford, Tunbridge, Vt. Died at Walpole, N.H., 1850. This was one of the best of his family.

ABDALLAH. — B. h.; foaled 1825; got by Mambrino, 1449 (son of imp. Messenger); dam, Amazonia, by a son of imp. Messenger, 1562. Bred by John Tredwell, Esq., near Jamaica, L. I. Different authorities do not agree on this horse's age; some making him as early as 1823, others as late as 1826. He was owned by John W. Hunt, Lexington, Ky., 1840, and brought back to Long Island the next year. Died 1852 at Gravesend, L.I.

DESCRIPTION.

Taggart's Abdallah stands fifteen hands three inches high; weighs 1,050 pounds; clean, rangy, thorough-bred look, bright dappled bay color, coat like satin, a fine disposition. At the New-England Fair at Manchester, 1870, in soft condition, trotted his mile in 2.28, and repeated a half in 1.12½. He has shown his trotting-qualities in several public purses. At Saugus, Mass., Providence, R.I., Hillsborough County, for a purse for all horses, he, in every instance, distanced his competitors. He is without speck or blemish, and a model of perfection; and, more, he is the sire of the best trotting-family in New England.

For further information, address D. M. Taggart, Goffstown, N.H. (See portrait, p. 64.)

LIVE OAK.

The property of W. H. H. Murray, Guilford, Conn. Live Oak is in color a rich mahogany bay with black points. He stands a little short of fifteen hands and a half in height, weighs 1,100 pounds, and is of very spirited and noble appearance. His muscular development is most extraordinary; so much so as to distinguish him among horses noted in this respect. He has never been trained or driven for speed, but moves with the squarest trotting-action. In ability to transmit his likeness, and way of going to his offspring, he resembles his Morgan ancestors. He was bred in Danville, Vt.; and is now ten years of age, just past. He is regarded by his owner as every way worthy of public patronage.

PEDIGREE.

Live Oak was sired by Morrill; he by the Jennison horse; he by One Eye; he by Bulrush Morgan; he by Justin Morgan, founder of the Morgan family. The dam of One Eye, the great-grandsire of Live Oak, was sired by the Farrington horse; he by the Vance horse; he by Messenger. The dam of the Vance horse was Garland: and she was sired by Duroc; he by imported Diomed. Garland's dam was Miller's Damsel, sired by Hambletonian; he by imported Messenger. Young Miller's Damsel's dam was Miller's Damsel, sired by imported Messenger, out of imported Pot8os mare.

It will be observed that Live Oak, on his sire's side, runs back through three strains to imported Diomed, and also three strains to imported Messenger.

The dam of Live Oak was sired by the Judivine horse; he by Vermont Champion; he by Vermont Morgan Champion; he by Sherman; he by old Justin Morgan. (See portrait, p. 32.)

DANIEL LAMBERT.

The celebrated trotting-stallion Daniel Lambert is kept at the Cream-hill Breeding Farm, Shoreham, Vt.

DESCRIPTION.

Daniel Lambert was foaled in 1858. His color is chestnut, with one white hind-foot, and mane and tail of lighter hue, and of extraordinary fineness and beauty. He is very fine drawn in his limbs, neck, and head. He is called, by those competent to judge, one of the most beautiful horses in America. In trotting-action he is simply perfect. His record as a three-year-old was 2.36. As a stock-horse he is having extraordinary success. He transmits his beauty and speed to his colts. If any doubt this statement, we invite them to come and look at his stock.

PEDIGREE.

Sire, Ethan Allen, by Vermont Black Hawk, by Sherman Morgan, by Justin Morgan.

Dam, Fanny Cook, by Old Abdallah, by Old Mambrino, by imported Messenger. Fanny Cook's dam was by Old American Star, by Old Eclipse. Fanny Cook's grand-dam was by Red Bird, by Old Red Bird, by Old Eclipse.

For further information, address A. C. Harris, Shoreham, Vt. (See portrait, p. 192.)

MORGAN ABDALLAH.

Owned by W. H. H. Murray, and kept at his farm, Guilford, Conn.; where samples of his stock can be seen.

DESCRIPTION.

Morgan Abdallah is of rich bay color, beautifully dappled with jet-black points. At four years of age he is fifteen hands and one inch in height, and weighs a thousand pounds. His disposition is perfect. From the day he was foaled he has been remarkable for his beauty. His admirers pronounce him the handsomest colt they have ever seen. He is a *natural* trotter. When twenty-six months old he trotted a quarter of a mile in forty-five seconds, and repeated it in forty-three without a break. He had never been shod, and had been harnessed only twenty times. Possessing a large share of Morgan blood, he transmits his qualities to his progeny. We recommend him with confidence to the public.

PEDIGREE.

Sired by Taggart's Abdallah; he by Farmer's Beauty; he by Gifford Morgan; he by Woodbury; he by Justin Morgan. Morgan Abdallah's dam was sired by Morgan Tiger; he by Cock of the Rock; he by Sherman; he by Justin Morgan. His grand-dam on the sire's side was sired by Old Abdallah: his grand-dam on the dam's side was sired by imported Bellfounder.

For further information, address head groom, Alexander Good, Guilford, Conn. (See portrait, p. 352.)

HARVARD.

Owned by Peter B. Bradley, Boston, Mass.

DESCRIPTION.

Harvard is four years of age, and is fifteen and a half hands in height. His weight is one thousand pounds; and he is of beautiful dark chestnut color, with white blaze in the face. He is a horse of great muscular development, and of faultless action when in motion. He is a *natural* trotter; was able, when a three-year-old, to trot a mile in three minutes without professional driving or training. As a roadster and gentleman's driving-horse he cannot be excelled. He is of docile but spirited disposition; which, with his trotting-action, he transmits to his colts. We invite attention to his

PEDIGREE.

Harvard was sired by Quinipiac; he by Green's Hambletonian. Green's Hambletonian was full brother to the celebrated horse Volunteer. His first dam was sired by the noted horse Leviathan, which, although kept for the stud, has a record of 2.26 to saddle, and of 2.30, 2.30½, 2.31, in three heats to wagon. Second dam was a fast-trotting Messenger mare. Leviathan was sired by Flying Cloud; he by Hill's Black Hawk. Leviathan's dam was sired by imported Leviathan.

For further information, address Peter B. Bradley, 24 Broad Street, Boston, Mass. (See portrait, p. 256.)

RYSDYK.

Owned by C. M. Pond, Hartford, Conn.

DESCRIPTION.

Rysdyk is a beautiful bay with black points. Height, fifteen, two and a half; and weighs 1,050 pounds. In structure he is the picture of great muscular power; while in appearance he has almost the fineness of a thorough-bred. In temperament and disposition he is faultless; full of fire and gentleness. Representing as he does the union between the best trotting-family and best running-family of the country, he responds fully to his high breeding. Through his dam he is connected with the Diomed blood, which, mingled with the Messenger blood, has produced the highest results American breeding has achieved. We invite special attention to the pedigree table.

PEDIGREE.

Sire, Rysdyk's Hambletonian, by Abdallah. First dam, Charles Kent mare, by imported Bellfounder; second dam, One Eye, by Bishop's Hambletonian; third dam, Silvertail, by imported Messenger.

Abdallah, by Mambrino; he by Messenger. Dam, Amazonia, by Messenger.

Bishop's Hambletonian, by Messenger. First dam, Pheasant, by imported Shark; second dam, by imported Medley. Dam of Rysdyk, by the famous Lexington.

[I regard this horse as full proof of my views touching the crossing Hambletonian with a thorough-bred. In my opinion, he is one of the very best colts the old horse ever sired. — *Author.*]

Second dam, Magdalen, by Medoc; third dam, Keph's dam, by Sumpter; fourth dam, by Lewis's Eclipse; fifth dam, Maria, by Craig's Alfred; sixth dam, by Tayloe's Bellair; seventh dam, by imported Medley.

Lexington, by Boston. Dam, Alice Carneal, by imported Sarpedon; second dam, Rowena, by Sumpter; third dam, Lady Grey, by Robin Grey; fourth dam, Maria, by Melzar.

Medoc, sire of Magdalen, by American Eclipse. Dam, Young Maid of the Oaks, by imported Expedition; second dam, Maid of the Oaks, by imported Expedition; third dam, Annette, by imported Shark.

American Eclipse, sire of Medoc, by Duroc, son of imported Diomed. Dam, Miller's Damsel, by imported Messenger.

Sumpter, by Sir Archy, son of imported Diomed. Dam, Robin mare, by imported Robin Redbreast.

Lewis's Eclipse, bred by Horatio Turpin, Virginia, by imported Diomed. Dam, by Harris's Eclipse; second dam, by imported Granby; third dam, by imported Janus; fourth dam, Poll Flaxen, by imported Jolly Roger; fifth dam, imported Mary Grey, by Roundhead.

Craig's Alfred, by imported Medley. Dam, by Symme's Wildair; second dam, by Sloe; third dam, by imported Valiant.

Tayloe's Bellair, by imported Medley. Dam, Selima, by Yorick; second dam, Black Selima, by imported Fearnaught; third dam, imported Selima, by the Godolphin Arabian.

For further information, address C. M. Pond, Hartford, Conn. (See portrait, p. 160.)

FEARNAUGHT, JUN.

Owned by David Nevins, jun., Framingham, Mass.

DESCRIPTION.

Fearnaught, jun., is of beautiful chestnut color, with one white foot behind, and small stripe in the forehead. He is fifteen and a half hands in height, and weighs 1,050 pounds. He has never been trained for the turf since he was a colt, when he showed speed of the very first order; but the public know that his ability as a trotter to go very fast, and stay, has never been doubted. Fearnaught has left no other son so noted, or apparently so likely to perpetuate the family name in honor. In disposition, Fearnaught, jun., is remarkably amiable; and his success in the stud has been worthy of himself and his ancestors. His colts closely resemble him in color, action, and courage. Indeed, as a stock-horse, his fame is already secured.

PEDIGREE.

Fearnaught, jun., was sired by Fearnaught; he by Young Morrill; he by Old Morrill; he by the Jennison horse; he by One Eye; he by Bulrush; he by Justin Morgan. (For further pedigree in the male line, see Tables V. and XXIX.)

Dam of Fearnaught, jun., is said to be by Old Abdallah. Of this, evidence by affidavit is lacking; but, from all we can ascertain, it is entirely worthy of credence.

For further information, address David Nevins, jun., Framingham, Mass. (See portrait, p. 224.)

THOMAS JEFFERSON.

Owned by William B. Smith, of Hartford, Conn.

DESCRIPTION.

Thomas Jefferson is jet-black in color, with beautiful silky coat, and a white star in his forehead. He is fifteen hands and a quarter in height, and weighs nine hundred and fifty pounds. He is a naturally-gaited trotter, and one of the fastest in the country. Of his speed and staying qualities the public can judge by the fact that he trotted a third heat at Prospect Park in June, also a third heat at Hampden Park in August, 1871, with ease, in 2.25½.

As a stock-horse, Jefferson is a success; the majority of his colts being able to beat three minutes at four years old, and many of them at three years old: besides, they possess this crowning capacity, — that of *training on* like their sire, without flinching. For temper, soundness, speed, and stoutness, they cannot be surpassed. His capacity to produce fast and famous colts from common mares has been fully established; and I will endeavor to convince any and all of this truth who will take the trouble to call on me.

PEDIGREE.

Toronto Chief, the sire of Jefferson, is brown, sixteen hands, sound and handsome; a natural trotter, with a record to saddle of 2.24½. He is the first horse that ever trotted a half-mile in 1.08½ in a public race.

Gypsy Queen, the dam of Jefferson, is black, fifteen hands and a quarter; handsome, with the exception of light tail; being famous at the West as a perfect "stayer," and a winner at three, five, and ten miles. In her last ten-mile race she was beaten less than a length by Capt. McGowan, in 28.11. She was purchased by Thomas J. Vail, at Louisville, Ky., of Bidwell, a Western trainer and driver, who represented that Gypsy was sired by Wagner, and her dam by Glencoe. She was perfectly sound when put to breeding.

For further information, address William B. Smith, Hartford, Conn. (See portrait, p. 96.)

[As in the case of Rysdyk, because both are owned in my native State, and therefore of peculiar interest to me, as to all Connecticut breeders, I have felt at liberty to call their special attention to this horse. He is, beyond doubt, the fastest stock-horse ever owned in the State, and one of the fastest in the country. — *Author.*]

FEARNAUGHT.

Lately owned by Col. H. S. Russell, Home Farm, Milton, Mass.

(PEDIGREE. — See Table XXIV.)

DESCRIPTION.

The engraving on page 8 is an admirable likeness of the celebrated stallion Fearnaught, whose recent death at Milton must be a disappointment to all who are interested in improving the stock of New England, as well as to those who sympathize specially with the efforts at Home Farm to encourage the breeding of fine horses in this part of the country.

Fearnaught's public record was 2.23¼ at Buffalo in 1868, when he beat some of the horses now most prominent on the trotting-turf; and, without considering his speed, we may well mourn the loss of a stock-horse which had the power of giving to his progeny, in very great degree, the beautiful form, action, and speed, which placed him first in the list of the favorite horses of New England.

His last victory was at the New-England Fair of 1872, when he received the first premiums and gold medal offered for the best stock-horse; and, when the trustees barred him from competing this year, they little thought he could not be present to receive the praise of those who had grown to regard him as the common property and pride of New England.

But, while lamenting the loss of this noble horse, it must be remembered that he has left a numerous family at his last home, some of whom will doubtless successfully fill his place: for, during several years, he has been bred to mares carefully selected from different parts of America and Europe, the

mingling of whose blood with that of Fearnaught ought to give stock-horses equal if not superior to their sire ; and great care will be taken in selecting the one to stand at the head of the farm with which the name of this famous horse has been so closely associated.

STAR OF THE SOUTH.

A TROTTING THOROUGH-BRED.

It gives me sincere pleasure to call the public's attention to the horse Star of the South, bred in Virginia, and now in my possession for stock-purposes. Our opinion, formed after a thorough examination of his pedigree, himself, and his get, is positive, and to this effect, — *that he has every requisite excellency, and is the most perfect horse we have ever seen.*

In vindication of this opinion we offer the following: —

1. He is of the *purest blood.* In every branch and line of his ancestry he is *thorough-bred.*

2. His beauty, both in respect to symmetry of form and brilliancy of color, exceeds that of any stallion we have ever seen.

3. In docility, intelligence, and courage, he is a king among horses.

4. He is a *natural trotter.*

5. *He transmits his beauty and splendid action to his offspring.*

In this horse there are the following excellences, — purity of blood, beauty, symmetry of form, docility, intelligence, resolution, a splendid trotting-action, and *the power to transmit all of these marks to his progeny.* If this horse has these qualities to the degree that we assert he has, he is a most remarkable animal. The reader is invited to visit his stable, and, by personal inspection, decide for himself whether he has or has not. In addition to the accompanying portrait (see page 384), we append the following verbal description: —

Star of the South is a rich golden chestnut, of the most sheeny and brilliant color, with one white ankle, and a clear white star in the forehead. He is fifteen and three-quarters hands in height, and weighs eleven hundred pounds. He is a horse of great muscular substance, and perfect symmetry of form. His feet and limbs are perfect, while his neck and head are such as are usually found only in pictures. He is ten

years of age, and without a physical blemish or a fault of temper.

PEDIGREE.

Star of the South was sired by Revenue, sire of Planet, Sue Washington, Fanny Washington, and many other racing celebrities. Revenue was foaled spring of 1843 by imp. Trustee, dam Rosalie Somers by Sir Charles (son of Sir Archy); 2d dam, Mischief by Virginian (son of Sir Archy); 3d dam by imp. Bedford; 4th dam by Tayloe's Bellair; 5th dam by imp. Shark; 6th dam by Symme's Wildair; 7th dam by Lexington of Va.; 8th dam by Spanking Roger; 9th dam by imp. Jolly Roger; 10th dam by imp. mare Miss Bell. Lady Fairfield, the dam of the Star of the South, is by Herald (he by English Plenipotentiary, dam imp. Delphine by Whisker); 2d dam, Betsey White by Goliah; 3d dam by Sir Charles; 4th dam by Sir Alfred.

A horse that can trace his blood through such ancestors as Revenue, imp. Trustee, Sir Archy, Symme's Wildair, imp. Fearnaught, and others of almost equal note, needs no further indorsement among horsemen, or better introduction to the favorable attention of breeders.

To gentlemen owning thorough-bred or well-bred mares, desirous of raising a perfect saddle-horse; to those who, having trotting-mares, wish to cross them with a horse which will be sure to give to their foals beauty and high courage; and to breeders who are looking for a cross by which to enrich their cold-blooded dams with a warmer current, — we especially commend this horse.

For further information, send for circular. Address Alexander Good, head groom, Guilford, Conn.

W. H. H. MURRAY.

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